LITERATURE OF MANUFACTURERS

Catalogues, bulletins and other direct advertising material recently issued.

Manufacturers are requested to send copies of new trade literature promptly to Electric Refrigeration News.

Clifford

The Clifford packless valve, designed for use with remote or multiple installations, is described in a small folder issued by Clifford Mfg. Co., Boston, Mass. One illustration shows the valve, which is 5 inches high by 2 inches wide, assembled; while another shows a cross-section with the one-piece "Hydron" metallic bellows.

Copeland

Copeland Products, Inc., Detroit, has just issued a new catalog of systems and parts, which is a comprehensive and thorough listing of all equipment which it manufactures, with prices, full specifications of materials for each installation, and complete diagrams. The booklet, with an attractive cover of heavy blue paper, is loose-leaf in form.

It opens with a preface containing the Copeland warranty, prices and terms, samples of parts orders and systems orders, memoranda for motor returns, the motor guarantee, a list of flat repair charges, sample forms for damage claims and information regarding the procedure for returning material.

Then come sections dealing with compressors, condensing units, controls, cooling units, expansion valves, installation material, motors, refrigerator cabinets, service equipment, systems and water coolers, each section being segregated with a heavy blue leaf.

Gardner

A small folder describing the Gardner half-minute freezer has been issued by the electric refrigeration department of General Electric Co. The various parts of this device are shown and directions are given for its use. Recipes for five kinds of ice cream are included. This freezer is being distributed by General Electric refrigerator dealers and distributors.

Holmes

Holmes Products, Inc., New York, N Y., have issued a book entitled, "An Investment in Quality," which is devoted to a description of the manufacture of Holmes cabinets at the Bridgeport, Conn., factory.

The construction phases treated in this book cover insulation, manufacture of the steel outer-shell, inserting of porcelain interiors, finishing of cabinets and installation of the condensing unit. In addition, the two-day tests which all units are subjected to are also outlined.

Ranco

Bulletin 603, issued by the Automatic Reclosing Circuit Breaker Co., 1304 Indianola Ave., Cleveland, Ohio, describes Ranco controls. This control operates on the freezing solution principle. Its construction and operation are explained and illustrated by means of a sectional diagram. Temperature charts are included and four types of mountings are illustrated.

Rex

Rex cabinets for mechanical refrigeration are illustrated in a folder issued by Rex Mfg. Co., Connersville, Ind. Five of the models shown are residence models and five are for apartment house installation. These models have food storage capacities ranging from 4 to 15 cu. ft.

Utilities Engineering Institute

The home study course in electric refrigeration offered by Utilities Engineering Institute, 4403 Sheridan Road, Chicago, is outlined in its new 24 page catalog. This course has 48 lessons which include selling, operation, installation, and servicing of electric refrigerators.

Heads Refrigeration Department of Westinghouse Company

C. D. Taylor

Who is manager of the refrigeration department of the Westinghouse Electric & Manufacturing Co., Mansfield, Ohio. The Westinghouse company is making plans to put a new electric refrigeration unit on the market about the first of next year.

ADDRESSES WANTED

Copies of the News sent to subscribers listed at the addresses given below have not been delivered. Readers knowing the present whereabouts of these subscribers are asked to send such information to the News.

Balfe, J. R., Kenwood Apts., Great Neck, L. I., N. Y.

Bayer, J. B., State Bank and Evert Bldg., Richmond, Va.

Bergendahl, C. A., 1130 Cornelia Ave., Chicago, Ill.

Betzendorfer, Jos. J., Room 34, Central Y. M. C. A., Harrisburg, Pa.

Braun, A., 103 W. 104th, New York, N. Y.

Brooks, S. C., General Delivery, Roslyn, N. Y.

Cook, Arthur G., General Delivery, Visalia, Calif.

Dilworth, R. G., 800 Prentis Ave., Detroit, Mich.

Electro-Kold Corp., 152 W. 42nd St., New York, N. Y.

Freeman, Chas., Sheridan Hotel, 38th and Market Sts., Philadelphia, Pa.

Hale, A. E., 15066 Sussex, Detroit, Mich.

Hartwig, George C., 4911 Winthrop Ave., Chicago, Ill.

Johnson, A. C., General Delivery, Salisbury, Md.

Kelly-Smith Co., Henry Statuon Woodman, 420 Lexington Ave., New York, N. Y.

Kobick, Henry G., 160 E. Illinois St., Chicago, Ill.

Leathers, J. G., 36 S. 17th St., Philadelphia, Pa.

Ludington, Ralph R. Shelton, Lexington Ave. and 429, New York, N. Y.

Masland, Geo. H., Masland Zerozone Co., Inc., 3135 N. Broad St., Philadelphia, Pa.

Montgomery, L. Springs, Domestic Electric Co., 39 West 45th St., New York, N. Y.

Palmer, George C., 1710 Arch St., Philadelphia, Pa.

Parker, W. T., c/o Fifth Ave. Hotel, Monessen, Pa.

Robinson, Roscoe G., 66 Edgewood St., Hartford, Conn.

Rykken, Leon H., 160 E. Illinois St., Chicago, Ill.

REQUESTS FOR INFORMATION

Readers who can assist in furnishing correct answers to inquiries or who can supply additional information are invited to address Electric Refrigeration News, referring to the query number.

Refrigerator Hardware

Query No. 251—A reader in Texas writes, "I am in the market for a few pieces of refrigerator hardware, namely latches and hinges, for replacement on an eight-door grocery box. For this equipment an offset of ⅝ in. is required."

Note—The Grand Rapids Brass Co., Grand Rapids, Mich., and the Winters & Crampton Mfg. Co., Grandville, Mich., are manufacturers of refrigerator hardware.—Editor.

Pressure Controls and Expansion Valves

Query No. 252—A reader in New York asks, "Kindly furnish us with the name of any manufacturers of pressure controls and expansion valves."

Note—The Jan. 2 issue of the News contains a listing of the manufacturers of pressure controls and expansion valves.—Editor.

Methyl Chloride

Query No. 253—A subscriber in Illinois writes "Will you please give us the names of the manufacturers of methyl chloride."

Note—The Roessler & Hasslacher Chemical Co., 10 East 40th St., New York, N. Y., are manufacturers of methyl chloride.—Editor.

Serum Cabinets

Query No. 254—A reader in Texas writes, "We are desirous of locating the firm who manufactures a steel cabinet containing steel drawers to fit in electric refrigerators, for use in hospitals for keeping serums. The name of this firm is either Lorrilard or Lorolard. Can you supply us with the address of this concern or any other manufacturer of such equipment."

Note—The Lorillard Refrigerator Co. is located at 85 Grand St., Kingston, N. Y.—Editor.

Live Rubber Gaskets

Query No. 255—A subscriber in Wisconsin states, "We have recently been called upon to supply a live rubber gasket approximately 5/8 in. wide and 3/16 in. thick such as is used on Jewett refrigerators.

Note—Rubber gaskets are manufactured by the following companies: D. W. Eesley Co., 1901-11 Carroll Ave., Chicago, Ill.; Jarrow Products Corp., 143 W. Austin Ave., Chicago, Ill.; Miller Rubber Co. of New York, Akron, Ohio, and Wirfs Corporation, 135 S. 17th Street, St. Louis, Mo.—Editor.

Dairy Cooling Machinery

Query No. 256—A reader in Oklahoma writes, "We would appreciate it very much if you would send us the name and address of the manufacturer of Bestov products and dairy cooling machinery. We are particularly interested in the refrigerators they build that have large brine storage capacities. If you do not know the address of this firm can you give us the name and address of some concern that specializes in refrigerators for heavy brine storage to be used in circulating pumps in connection with dairy cooling equipment. We prefer the upright type of boxes."

Subscription Order

ELECTRIC REFRIGERATION NEWS,
550 MACCABEES BUILDING, DETROIT, MICH.

Please enter subscription to Electric Refrigeration News.

United States and Possessions:

☐ $2.00 per year. ☐ Three years for $5.00.

All other Countries:

☐ $2.25 per year. ☐ Two years for $4.00

I am enclosing payment in the form of

☐ Check ☐ P. O. Order ☐ Cash

Name .....

Street Address .....

City and State .....

Remarks: .....

LIQUID COOLER CORP. DETROIT, ANNOUNCES WATER COOLING UNIT

Announcement is made of the first of a new line of liquid coolers by a new concern, the Liquid Cooler Corporation, Detroit, organized by Herbert C. Kellogg.

According to the announcement this unit makes it possible to build the complete cooling system into the drinking fountain. This is due to the fact that the new unit, specifically designed for single jet operation, measures only 4 in. by 7 in. in diameter, exclusive of fittings. A line of vitreous enamel pedestal and wall fountains with space for the cooling unit, is now being built for the Liquid Cooler Corporation by the D. A. Ebinger Sanitary Mfg. Company of Columbus, Ohio. In addition to these commercial fixtures, a line of art fixtures consisting chiefly of wall and niche types, is being designed by Mary Chase Straton of the Pewabic Pottery Company. These latter fountains are designed only for production in limited quantities to harmonize with specfic architectural motifs.

The principle of heat transfer employed is of the direct or instantaneous method. The coil containing the drinking water is surrounded by the liquid refrigerant. The coil surface has been carefully calculated to accomplish the cooling of a volume of water which will adequately supply a single jet and properly maintain any desired exit temperature in spite of incoming temperatures up to and including 100 deg., according to the makers.

It is claimed that a test conducted recently on one of these coolers showed that with incoming water at 79.5 deg. and exit water at 49 deg. there was a flow of 20 gallons an hour through a 3-16 in. jet or a B. T. U. transfer of 5220 per hour. The double-U cross section of the coil makes it possible for the tube to withstand repeated freezings without fracture. The metal used is a special brass compound developed by the Bureau of Standards to resist the action of the various types of drinking water found throughout the country.

The coil is enclosed in a drawn steel shell and surrounds a special open type of liquid level float control which affords a very large gas intake area, thus preventing the liquid refrigerant from returning. The float proper is of unusually great displacement and is therefore very sensitive and powerful. The design of this element is such that it is subject to equal pressures outside and in and therefore cannot be damaged when evacuating or by high pressure.

The arrangement of the liquid needle, seat and screen in one easily removable or replaceable assembly is given as another feature.

The temperature control valve is so designed that it will maintain pressures within a 3 pound range between no load and maximum load the makers claim. The valve is set at the factory and makes it possible to maintain the desired temperature irrespective of the compressor control setting and obviating the necessity of using narrow range compressor controls.

In other words it should be possible to set the temperature of the exit water at, say 45 deg., and then because the cooling unit is placed immediately below the jet, depend upon having every drop emitted by the jet within 2 deg. or 3 deg. of the set temperature.

The engineering research on the new principles involved in these coolers parallels Mr. Kellogg's association with the Nizer Corporation and several other manufacturers in the refrigeration field.

Automatic Refrigeration Co. Takes Frigidaire San Jose Outlet

Automatic Refrigeration Co., Frigidaire dealers, located at Stockton, Lodi, Tracy, Sonora and Watson, Calif., have taken over the dealership of San Jose, Calif. Norman R. Greer, of the commercial division at Stockton, has been appointed manager of the San Jose outlet. Harrison J. DeVere is general manager of the Automatic Refrigeration Co.

"Personally, I think you have the livest paper devoted to the refrigerating industry. I would certainly miss it if it did not come regularly."—M. L. Stewart, general manager of the Stewart Ice Machine Co., Los Angeles, Calif.

THE CONDENSER

ADVERTISING RATE fifty cents per line (this column only).

SPECIAL RATE if paid in advance—Positions Wanted—fifty words or less, one insertion $2.00, additional words four cents each. Three insertions $5.00, additional words ten cents each. All other classifications—fifty words or less, one insertion $3.00, additional words six cents each. Three insertions $8.00, additional words sixteen cents each.

POSITIONS AVAILABLE

MANUFACTURER of well-known line of steel apartment house cabinets wants commission salesman to sell cabinets to ice machine dealers, apartment owners and apartment builders. Give reference. Box 168.

WANTED—Practical draftsman with designing and lay-out refrigeration experience. Give full history and salary in first letter. Permanent position with old established company. E. W. Bliss Co., Salem, Ohio.

POSITIONS WANTED

SERVICE MANAGER or service and installation man. Several years' experience in all phases of electrical refrigeration business with methyl-chloride and sulphur dioxide—domestic and commercial and multiple systems. Age 30, clean cut, with good character references. Some sales ability. Willing to go anywhere. Address confidentially, Box 172.

LATIN AMERICA—SALES AND SERVICE ENGINEER; competent organizer; with ten years' experience and residence in Latin America, thoroughly familiar with market, conditions and languages. Desires connection with strong firm as foreign representative. Excellent references. Box No. 173.

MISCELLANEOUS

BUSINESS OPPORTUNITY—To purchase a growing refrigerator manufacturing plant, well equipped, doing a nice business. Good reasons for selling. Address Box No. 169.

LARGE MANUFACTURER has developed electric domestic refrigeration unit, and is prepared to supply same to well-established distributing organization in any quantity, at favorable prices. This unit is direct connected to motor, no belts, compact, no vibration, is silent, air cooled, low power consumption, no interference with radio, may be placed above or below space cooled.
Address:
Box No. 167, Electric Refrigeration News

ELECTRIC REFRIGERATION NEWS

The business newspaper of the refrigeration industry

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ENGINEERS COMPROMISE CODE DISPUTE

ICE REFRIGERATOR MEN ARGUE MERIT OF 50° STANDARD

A. S. R. E. Session at State College Brings Out Pros and Cons of "50° Danger Line"

MEMBERS of The American Society of Refrigerating Engineers with their guests and families spent three crowded days at the annual summer meeting, held at Pennsylvania State College, June 20, 21 and 22. This spot proved to be exceedingly well selected, although off the beaten path of the industrial groups, as the attendance turned out to be a record one for any mid-year meeting, while enthusiasm for all features of the event was unparalleled.

Members were housed in college buildings between Wednesday and Saturday, during which time five technical sessions, involving twenty-one technical papers and professional addresses, were held. Participation in the exhibits, side trips and entertainment features was keen while splendid weather conditions prevailed in the mountainous regions about State College.

The business conducted centered around technical sessions on ice plant design, refrigeration research and refrigerator merchandising with two meeting devoted to problems of refrigerated transport. This wide diversity of interest attracted almost as many different groups, each interested in a particular subject. The session of the closing day was characterized by a lengthy discussion as to the validity and expediency of the "50° danger line."

The convention officially opened on the morning of June 20, with an address of welcome by Dean G. L. Wendt, who stressed the relation of engineering practice to the work of the colleges. On behalf of the Society, John E. Starr replied by agreeing with Dean Wendt, and pleading for all members to support the Society to the best of their abaility. President Wood presiding at the opening session, welcomed members to the atmosphere of the university and to serious business. Three papers on the design of ice plants were read by authorities; the first of a series of papers on this subject. Nearly everyone present took part in a lively discussion on the economics of buildings, power costs and machine operation.

In presenting the first paper, F. S. Strite, consulting engineer from New York City, gave a comprehensive summary of the factors in the design of the building itself. The second paper, presented by C. T. Baker, consulting engineer from Atlanta, Ga., discussed the problem of following plant performance by the use of instruments now available. The last paper of this session was presented by George Lange, vice-president of the American Ice Co., New York City, who quoted extensive figures on oil engines as compiled by this company from records made in many of their plants. According to him the turning point in choosing an oil engine or an electric motor is at the place where current costs 1.2c per K.W.H.; while if it costs as high as 1.6c up, the increased investment in an oil engine will pay a 50 per cent dividend in operating savings.

(Continued on page 10, column 1)

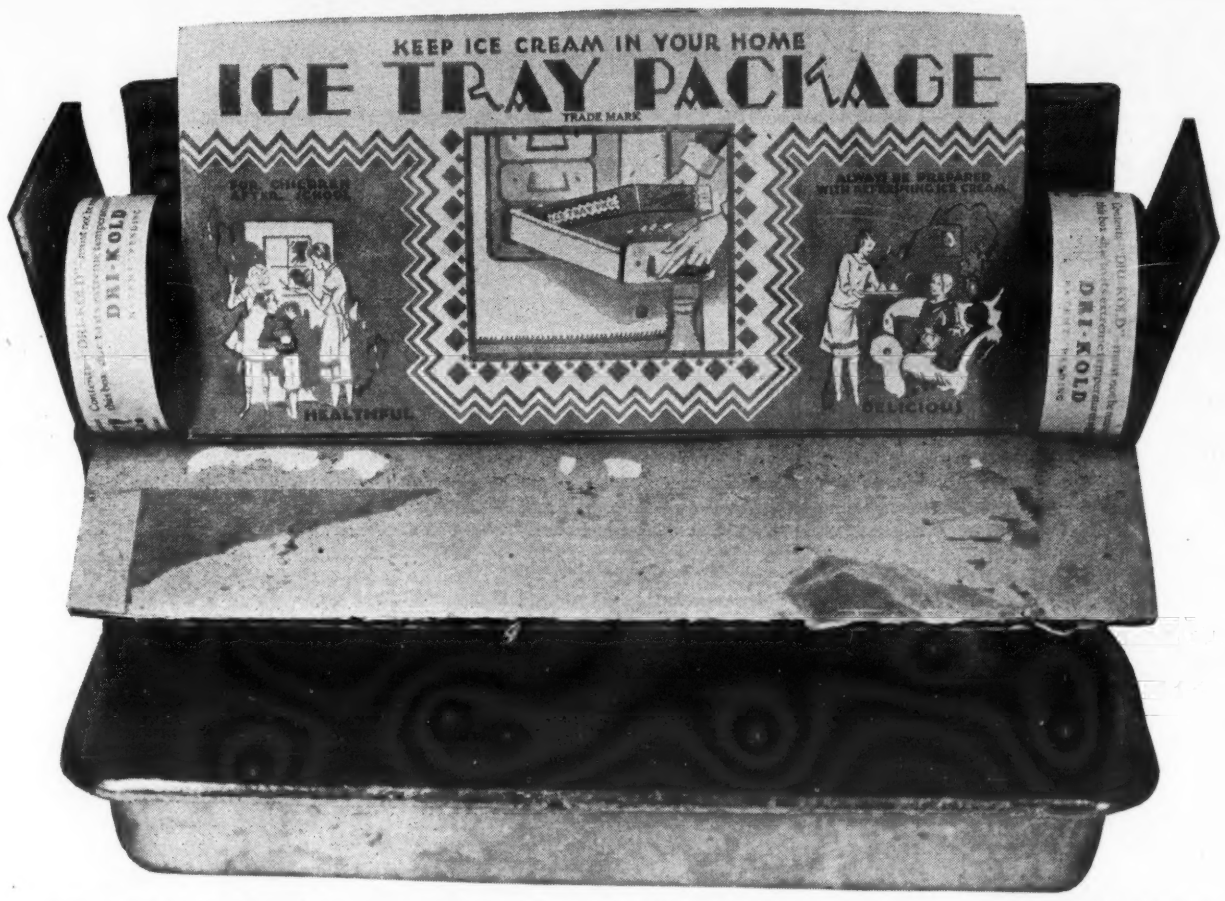
COPELAND PURCHASES CHICAGO DISTRIBUTOR FOR FACTORY BRANCH

Copeland Products, Inc., Detroit, Mich., announced recently through Louis Ruthenburg, president, that it has purchased entire control of the Chicago distributor, which has been operating under the name of Copeland Refrigeration Co. of Chicago.

"The operation of the Chicago office as a direct factory branch is one of the first steps in our nation-wide program of expansion and distribution of Copeland refrigeration," said Mr. Ruthenburg. "Chicago is the second largest market for distribution of all types of electrical refrigerating units, and we feel that the factory will be in a better position to properly serve the many thousands of Copeland customers in Chicago through our direct factory branch located in the Wrigley Building."

C. L. Welch, formerly president and general manager of the American Motor Truck Corp., has been appointed general manager of the new Chicago branch. The Chicago office will continue to be operated under the name of Copeland Refrigeration Co. of Chicago.

New Ice Cream Merchandizing Idea Capitalizes On Popularity of Electric Cooling



Fred Sanders Co., large ice cream manufacturers in Detroit, have designed an ice cream package which fits into the freezing tray of any electric refrigerator. The above photograph shows the Ice Tray Package flanked by the two small perforated disks for holding the solid carbon dioxide (Dri-Kold) and the cardboard container into which both the Ice Tray Package and the disks are placed when the ice cream is taken home. For additional information see story on page 4, column 3.

LOCAL COUNCILS ARE ORGANIZING FOR FOOD PRESERVATION DRIVE

Des Moines District Has Secured Cooperation of Civic and Industrial Units

THE organization of the National Food Preservation Program, the national movement for public health and welfare which is planned for a dominant advertising and publicity drive during the coming September, is now well under way. A number of the local councils have already been put through the preliminary stages of organization, and one, Des Moines, Ia., has been completed, and is functioning actively. In the organization of the council in the Iowa capital, Clinton Nash, of Davenport, regional director of the Program, secured the cooperation of the Advertising Club of Des Moines, as well as other civic and industrail units interested in the promotion of public health, particularly from the standpoint of food preservation.

The organization was accomplished at a meeting of the Advertising Club, to which the representatives of the other interested factors were invited. E. N. Hopkins of the public relations department of Meredith Publications, was named chairman of the Des Moines Food Preservation Council; Joe Schilling, vice-chairman, and Earl Moeller, secretary.

Skeleton organizations have been formed in a number of other cities, and regional directors, with the help of field representatives specially trained in organization work, are now at work lining up other territories.

Excellent prospects for 100 per cent. co-operation and participation of interested agencies is predicted by the great majority of these field representatives in their reports to headquarters. While they are just beginning their work in the field, all of them have done similar work in the past, and are familiar with the organization problems in this particular program due to an intensive training prior to their being sent into the field.

In twelve states, city chairmen have already been appointed, and orders for all tie-up materials which are being furnished through the National Program for local council work have already been

(Concluded on page 4, column 2)

BULLETIN

SALES of electric refrigerators by the Georgia Power Co., Atlanta, Ga., in its spring drive, which opened on May 1 and closed on June 29, will total more than one million dollars, according to a telegram received on July 1. General Electric domestic refrigerators and Kelvinator commercial units were featured in the campaign which extended over a period of 52 actual selling days.

The quota of $750,000 set as the goal in the drive was easily smashed by the Georgians and efforts were then made to pass the million dollar mark. Sales through June 25 totaled $896,936 or 119.59 per cent of its quota with four more days remaining in the campaign. At that time Atlanta stores led in sales with a total of $472,136 while the outside districts reported sales amounting to $424,800.

HEALTH DEPARTMENT OF CHICAGO CALLS IN REFRIGERATION MEN

A MEETING of representatives of electric refrigeration manufacturers called by Joel I. Connolly of the Department of Health was held in Room 704, City Hall, Chicago, Ill., June 27, for the purpose of discussing regulations governing the installation and testing of refrigerating equipment with special reference to details of the average multiple installation such as: (1) shaft seals, (2) gasketed joints on machine, (3) installation tubing, (4) flanged joints, and (5) flared tube fittings.

Minutes of Meeting

The meeting was called to order by Mr. Connolly at two p. m.

Those present were: W. L. Colterjohn and Harry C. Hayes, Absopure Refrigeration Co.; H. M. Coesfeld, Brunswick-Kroeschell Co.; G. D. Wetherbee, Commonwealth Edison Co.; H. T. Kessler, Copeland Refrigeration Co.; Howard E. Blood, Detroit Gear & Norge Co.; R. E. Smithson, Frigidaire Corporation; T. S. Keilholtz, Frigidaire Corporation; J. J. Donovan, General Electric Co.; C. J. Jolly, General Motors Corporation; Thomas H. Maginniss, Kelvinator Corporation; R. C. Haimbaugh, Peerless Ice

(Concluded on page 4, column 1)

DETROIT LAWMAKERS ADD NEW MULTIPLE CODE TO ORDINANCE

Amendment Requires Iron or Steel Pipes to Protect Copper Tubing

FAVORED by a number of manufacturer's representatives who were present at the meeting, the Common Council of the city of Detroit adopted June 11 a code regulating the installation of multiple refrigerating systems. This code complies with the code of the National Board of Fire Underwriters.

As adopted by the Council the multiple code takes the form of a supplementary amendment to the existing ordinance regulating the use of refrigerating apparatus. Revision of the entire ordinance within the next few months is contemplated, according to H. H. Mills of the Detroit Department of Safety Engineering.

The original ordinance was amended to include the new multiple code by changing the numbers of section 18, 19, and 20 of Chapter 130 of the Compiled Ordinances to read 28, 29, and 30, and inserting the new code in sections numbered 18 to 27, inclusive.

As the result of a fire in an apartment house in which a fireman was overcome by a refrigerant gas, John H. Bischoff, city commissioner of buildings and safety engineering, proposed the amendment. The fireman in question had severed a light copper connecting pipe with an axe while breaking through a wall.

IT IS HEREBY ORDAINED BY THE PEOPLE OF THE CITY OF DETROIT:

Section 1. That the numbers of Sections 18, 19 and 20 of Chapter 130 of the Compiled Ordinances of 1926 be changed to read 28, 29 and 30 and the following Sections 18 to 27 be added to read as follows:

Section 18. Application of Rules. The following sections 19 to 27 are intended to apply to the installation of multiple refrigerating systems as herein defined.

Section 19. Multiple Systems Defined. The term "multiple refrigerating system" shall mean and include all systems in which the refrigerant from a common source is delivered to two or more separate cabinets each containing one or more evaporators.

Section 20. Inspections and Approval.

(a) Multiple systems shall be of approved makes and patterns.

(b) No mutliple system shall be placed

(Concluded on page 13, column 2)

MUFFLY'S COMMITTEE WORKS OUT SAFETY PLAN FOR MULTIPLES

Agreement Forecasts Approval of Regulations by American Standard Association

RESPONDING to the growing demand for a settlement of the conflict over national and local safety regulations affecting the installation of refrigeration systems, the Technical Committee of the Refrigeration Division, National Electrical Manufacturers' Association, held an all-day meeting at the Association offices in the Graybar Bldg., New York City, Monday, June 24 and arrived at a basis for compromising the differences of opinion which have delayed the adoption, by the American Standards Association, of the proposed National Safety Code sponsored by the American Society of Refrigerating Engineers.

Representatives of all interests which have been in opposition at various hearings held in the past, were present at the meeting called by Chairman Glenn Muffly at the request of Leland P. Bannister of the headquarters staff of the National Electrical Manufacturers' Association. The Technical Committee consists of Glenn Muffly, Copeland Products, Inc.; E. T. Williams, Servel, Inc.; C. C. Spreen, Kelvinator Corp.; A. R. Stevenson, General Electric Co. and H. W. Kleist, Dole Refrigerating Machine Co. Mr. Kleist was unable to be present but was represented by C. C. Kritzer of the Peerless Ice Machine Co.

Methods of installing the multiple system of electric refrigeration in apartment houses, around which so much controversy has raged during the past few years, represented the most difficult problem confronting the Committee. A step in the direction of a compromise was taken at a previous meeting at which the Committee adopted a recommendation that the American Standards Association approve a code which would combine the features of the regulations sponsored by the American Society of Refrigerating Engineers (which make no provision for the multiple system) and the rules prepared by the National Board of Fire Underwriters (which deal only with the multiple system). The session held in New York was largely devoted to a study of the details of the two codes with a view to finding a middle ground on which the two documents might be harmonized.

A further step in the arbitration efforts was made on Tuesday, June 25, when the Technical Committee met with representatives of the industrial refrigerating machinery interests for an unofficial discussion of the A. S. A. Safety Code. The meeting was held in the office of H. D. Edwards of Carbide and Carbon Chemicals Corp., 30 East 42nd Street, New York City and was attended by A. H. Baer, Frick Co., Waynesboro, Pa.; Fred Nolde, secretary-treasurer of the Refrigerating Machinery ssociation, Philadelphia, Pa.; G. W. Booth, National Board of Fire Under-

(Concluded on page 13, column 4)

KELVINATOR SHIPMENTS GAIN; NEW MODEL FOUR SALES EXCEEDING QUOTA

Kelvinator shipments during the month just ended exceeded those made in June, 1928, by fifty per cent, according to H. W. Burritt, vice-president in charge of sales, Kelvinator Corporation. Orders received during June of the present year outdistance those of the same month in 1928 bv one hundred per cent, he said. June, 1929, shipments were practically the same as those of May, 1929. In the electric refrigeration industry the greatest volume of business is usually experienced during May, Mr. Burritt added.

The new Kelvinator M-4, a recently introduced model, priced at $175 f. o. b. Detroit, has met with a success far greater than that predicted by even the most optimistic factory officials, reports Mr. Burritt. So great is the welcome accorded this model by the public that orders for it now on hand exceed by three times the quota set when the M-4 was first introduced.

The success of this model has given additional impetus to a steadily increasing volume of business which the Kelvinator Corporation has enjoyed since the first of the year.

NEW KELVINATOR HEAVY DUTY COMMERCIAL REFRIGERATING MACHINES OPEN NEW VOLUME OF BUSINESS TO DEALERS . .

Cherrylawn Public Market, Detroit. All display counters are Kelvinator-cooled.

MODEL F-30

½ H. P. air-cooled unit, adaptable to large commercial installations, including display and freezer counters, refrigerators, etc.

MODEL WF-40

½ H. P. water-cooled unit, meets requirements of refrigerators generally used in markets, restaurants, florists, soda fountains and stores.

WITH the addition of six new heavy duty Kelvinator commercial refrigerating machines, Kelvinator dealers are now in a position to meet practically all requirements of commercial users.

To more effectively handle heavy refrigeration loads, Kelvinator machines in the larger sizes are now built with both water-cooled and refrigerant-cooled compressor heads.

Kelvinator engineers have thus overcome two of the chief handicaps to efficient operation of large units—the overheating of compressors and the formation of carbon deposits with consequent need of frequent service.

Kelvinator Heavy Duty Machines are strongly built, with heavy cast iron bases to eliminate vibration. They are designed and constructed to give unlimited low-cost service with the necessity for attention reduced to the minimum.

Under severe test, these new machines have demonstrated a new economy of operation, plus a complete elimination of carbon formation, increased capacity and extreme long life.

In combination with Kelvinator's development of the cross-fin cooling unit, the Kelvinator Commercial line offers complete coverage of the commercial field—from the smallest shop to the largest market, restaurant or apartment installation.

Upon request, we will gladly forward literature describing the new Kelvinator Heavy Duty Line and the complete 1929-30 line of Kelvinator Commercial Refrigerating Equipment.

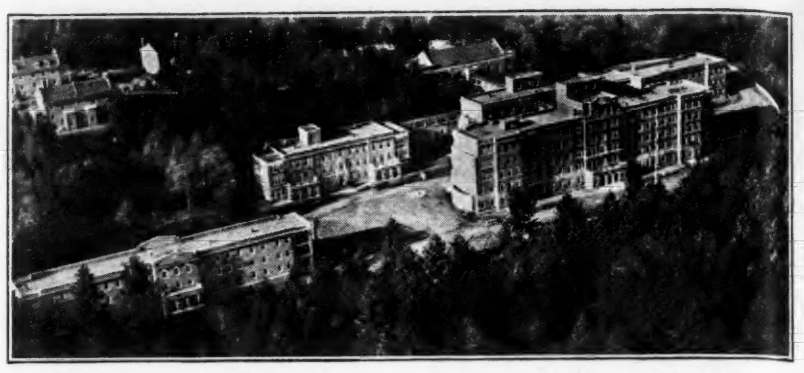
Kelvinator Corporation, Detroit, Michigan

THE NEW...

KELVINATOR

We Endorse the National Food Preservation Campaign for September

Portland Veterans' Hospital Utilizes 21 Frigidaires In Diet Kitchens



The new Veterans' hospital, in Portland, Ore., recently completed by the Denver Construction Co. at a cost of $1,350,000, is equipped with the most modern of applicances. Among these are the twenty-one all-porcelain boxes, installed by the Frigidaire Corp., of Portland, which will provide electric refrigeration in all of the twenty-one diet kitchens in the imposing structures that make up this U. S. government hospital unit.

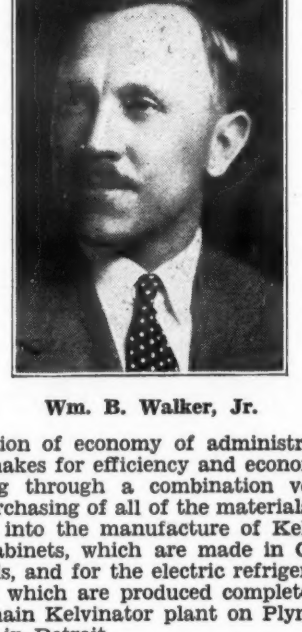
All of the boxes are two-tone models in gray and white. Seven are of 9 cu. ft. capacity and fourteen are of 7 cu. ft. Each is equipped with a self-contained unit of ¼ hp.

Included in the government contract, which was awarded at Washington, D. C., were twelve water coolers which have been conveniently placed throughout the buildings. These coolers are of different sizes, but average three bubblers each. All are cooled by units with ½ hp. motors.

KELVINATOR PURCHASING IS NOW UNDER ONE HEAD AT THE DETROIT PLANT

All purchasing for the Kelvinator Sales Corporation is now handled at the main plant in Detroit by purchasing agent Wm. B. Walker, Jr. This means that purchases for the Leonard division at Grand Rapids, formerly made at that end, will now be taken care of in Dertoit.

The centralization of all Kelvinator purchasing is a move not only in the



Wm. B. Walker, Jr.

direction of economy of administration, but makes for efficiency and economy of buying through a combination volume of purchasing of all of the materials that enter into the manufacture of Kelvinator cabinets, which are made in Grand Rapids, and for the electric refrigeration units, which are produced completely in the main Kelvinator plant on Plymouth Road in Detroit.

Mr. Walker, who has been the head of this department for several months, is a native of Detroit and during the seventeen years he has spent in the purchasing business has been connected mainly with the automotive industry. Previous to joining Kelvinator he had been with the Budd Manufacturing Co., of Detroit and Philadelphia for a considerable period. Before that he was purchasing agent for Dupont Motor at Wilmington, Del., and the Viscose Company, manufacturers of rayon. In the days when that car was being made he was with Columbia Motors and subsequently was with the Hudson Motor Car Company.

WAYNE REPORTS LARGE GAIN IN EXPORT SALES

Export sales of Wayne electric refrigerators during the first six months of this year more than tripled last year's sales for the same period, according to a report rendered by the statistical department of the Wayne Home Equipment Co., Fort Wayne, Ind., on June 27.

Despite the fact that export sales for 1928 were very satisfactory. Norbert G. Berghoff, export manager, states that the past high rate of increase will be maintained, if not increased, for the remaining six months of 1929. Aside from the fact that a good portion of the summer season still remains, the sales in South America will not open up until September and October. This particular field alone is sufficiently large enough to balance to a great extent the summer sales in a good many of the countries on the continent of Europe.

A contract has just been renewed with the AEG Cia Argentine de Electricidad, S. A. of Buenos Aires, Argentine, South America, for the remainder of 1929-30. This company is a subsidiary of the Algemine Elektrische Geselschaft, whose head office is located in Berlin, Germany.

Large orders have been received from the Refrigex Co., of Paris, France, who have recently been appointed distributors for the entire country of France, and its protectorates. The Refrigex company is a subsidairy of the Societe Generale de Electricidad, which is a large holding corporation in France.

M. F. MAHONEY APPOINTED ASSISTANT TO GENERAL ELECTRIC SALES MANAGER

The appointment of M. F. Mahoney as assistant to the sales manager is announced by the electric refrigeration department of the General Electric Co., Cleveland, Ohio. He has been in the employ of the General Electric Co. for ten years.

Mr. Mahoney first became connected with the refrigeration division at Schenectady in 1925 and with the electric refrigeration department at Cleveland in 1927, in the capacity of district representative at Albany, N. Y. In January, 1929, he was transferred to Cleveland as special sales representative in which capacity he developed a comprehensive budget plant for distributors.

As assistant to the sales manager, Mr. Mahoney will devote his time to the study and upbuilding of distributors' organizations as well as aiding them in the field. He succeeds C. E. Roesch, who is now vice-president of the Florida Electric Refrigeration Co., distributors of General Electric refrigerators at St. Petersburg.

WILLIAMS ANNOUNCES 3 STAFF PROMOTIONS AND NEW SALES DEPARTMENT

Three staff promotions and the creating of a new sales department are announced by the Williams Oil-O-Matic Heating Corporation, of Bloomington, Ill.

R. O. Ahlenius has been made general manager of the corporation, a new position. He joined the Williams company in August, 1928, after spending ten years as vice-president and general manager of a Bloomington wholesale grocery house in which he built the business to an annual volume of $4,000,000.

The new sales department has been created for the handling of the company's stove business, which has expanded rapidly. It is headed by M. E. Ticen.

W. J. Brevitt, who joined the Williams organization in 1925 as field man, has been appointed general sales manager. He has been assistant sales manager since January, 1928.

COPELAND REPORTS NET EARNINGS OF $242,477 FOR JAN.-MAY PERIOD

Copeland Products, Inc., Detroit, reports net earnings for the first five months of 1929 of $242,477.41, after taxes, depreciation and the setting aside of liberal reserves. This is an increase of more than 33 per cent over the same period of 1928 and equivalent to $2.37 per share on the Company's "A" stock outstanding. May net amounted to $79,044.91.

G. E. Distributor Takes Larger Quarters in Madison

D. S. Stophlet Co., Inc., Madison, Wis., distributors of General Electric refrigerators in southern Wisconsin, have moved to larger quarters in the Wisconsin Power & Light Co. building.

RURAL DEVELOPMENT STUDIED AT MICHIGAN UTILITIES' MEETINGS

MICHIGAN gas and electric utilities held conventions at Mackinac Island, Mich., on July 1-3. Advances made in the last twelve months in the producing, distributing and using of gas and electricity were discussed at the conventions.

The Electric Light association devoted particular attention to the problems involved in taking electric power to the farms of Michigan and adapting it to farm tasks. Papers on steps taken to solve the problem of constructing reliable, low-cost distribution lines for this purpose were presented by Fred W. Bagnall, Detroit, and F. W. Pollock, Jackson. Prof. H. J. Gallagher, of Michigan State College, reported upon progress made in the development of electrical farm equipment. L. C. Moore, holder of the farm electrification fellowship at State College reported on "Rural Electrification Research." Walter Carven, chairman of the farmers' committee on the Mason-Dansville experimental line, narrated "A Farmer's Experience in the Use of Electricity."

The Gas association's program included a discussion of problems involved in bringing gas to suburban communities; a report of research work conducted at the University of Michigan to determine the value of various coals for water gas making; developments during the year in the automatic heating of homes with gas; and description of an experimental plant at Grand Rapids to dehydrate gas.

NEW OMAHA CONCERN TAKES OVER FRANCHISE OF WOODS-COPELAND CO.

The Copeland Electric Refrigeration Co., recently organized in Omaha, Nebr., has taken over the franchise held by the Woods-Copeland Co., Lincoln, Nebr. Distribution will be made from Omaha for all of Nebraska and a portion of western Iowa.

Officers of the new concern are R. C. Olney, of Lincoln, president, C. W. Toms, formerly sales manager of the Woods-Copeland Co., Lincoln, vice president and general manager, James Bachman, Sprague, secretary and treasurer, Miller Strayer, formerly with the Woods-Copeland Co, is in charge of the commercial department, while F. W. Miles has taken charge of the service division.

Seventy-five dealers in that territory have been assigned to the Omaha outlet. Harold Pettibone, formerly with Kelvinator at Kansas City, has taken charge of the Sioux City territory, while W. F. Herring has been assigned to Lincoln and O. L. Bragg to Omaha. The Hardy Furniture Co. will be the sales agency for the Lincoln district.

FIRST NATIONAL ELECTRICAL EXPOSITION TO BE HELD AT NEW YORK CITY, OCT. 7 TO 12

Announcement of the First National Electrical Exposition, to be held in Grand Central Palace, New York, Oct. 7 to 12, under the joint auspices of the Electrical Board of Trade of New York and the New York Electric League was recently made. Every branch of the electrical industry will be represented at the forthcoming event. New discoveries, developments and uses for electricity will be displayed and discussed.

In order that the trade may visit the display under favorable conditions, special hours have been set apart. The trade hours will be from 10 a. m. to 2 p. m. daily, after which the public will be admitted.

125 UNITS SOLD IN 30-DAY DRIVE AT BLOOMINGTON, ILL.

A special 30-day drive recently staged by the Illinois Power and Light Co. in Bloomington, Ill., resulted in the sale of 101 Ice-O-Matic electric refrigerators and twenty-four others, of two makes. The total of 125 set a new record for the Bloomington store and exceeded the quota by more than 50 percent. In another drive just getting under way the quota has been set at 200.

R. W. AYRES GOES TO G. E. FROM SAVAGE ARMS CORP.

Russell W. Ayres, formerly chief engineer of Savage Arms Corporation, Refrigeration Division, Utica, N. Y., is now on the works manager's staff of the General Electric Company at Schenectady, N. Y.

Omaha Distributor Opens Spacious New Display Quarters

Formal Opening, with special radio programs and dancing, marks move of Storz Electric Refrigeration Co.

THE Storz Electric Refrigeration Co. of Omaha, Neb., moved into new sales and show rooms in the Masonic Temple, Nineteenth and Douglas streets on Friday, June 14. A formal opening was held on both Friday and Saturday. For the first time in Omaha the General Electric Co. had on display its commercial refrigeration units. Visitors on the opening days were entertained by National Broadcasting company programs, the local station WOW, and KOIL, of Council Bluffs. An orchestra furnished music for dancing in the evening of the first day.

The alterations in the 40x48 ft. display room, and other necessary costs, ran slightly above $20,000. The large display room has textone walls in a light buff. A complete display of General Electric refrigeration products is on the first floor. At the rear of the main room are two alcoves. Here two of the domestic refrigerators are placed on a raised platform.

There is a ladies' rest room, fitted with the latest in furniture; a sales' conference room that will accommodate sixty people and several small sales closing rooms. On the mezzanine floor are the general offices, the office of the president, manager, city sales manager and assistant sales manager, and a directors' room.

The service room is in the basement, as is also a special room that will be donated to the clubs and social organization of the city. This room is 34x42 ft. and will accommodate 100 people. The room is finished to represent a huge underground grotto. From the ceiling hangs large stalactites and so true are they that one touches with the hand before being convinced of the artificiality. Blue lights and tinted walls serve to further the deception.

Next to the grotto room is the completely furnished kitchen for the use of clubs, church organizations and others desiring to hold parties where lunch is to be served. A gas range, hot and cold running water, service table, kitchen cabinet and refrigerator, are a part of the furnishings. This inducement will serve to draw the ladies to the Storz display rooms. It will also make friends for the house and later develop many sales of G. E. refrigerators, thinks Mr. Nellor, the general manager.

The lighting throughout the entire building is very effective. Huge chandeliers are found in the display room while tasty enclosed lamps in light tone colors are in the offices, show room, kitchen and grotto.

At present the Storz Electric Refrigeration Company has all of Nebraska, and the western third of Iowa in the distributing territory from Omaha. There are 395 towns in that territory and the company has agencies in 315 of that number. Sixteen men care for the city sales in Omaha while there are seven in the wholesale field. W. A. Davies is city salesmanager.

Frigidaire Dealers Hold Meeting at Angola, Ind.

At a conference of Frigidaire dealers held at Angola, Ind., on June 11, dealers were in attendance from seven towns in Indiana, from three towns in Michigan, and from one town in Ohio. O. W. Gleason, sales manager, and C. M. Acker, division manager of the E. H. Walker Co., distributors, Toledo, Ohio, with Otto Endress, zone manager, Frigidaire Corp., Dayton, Ohio, were in charge of the meeting.

Kelvinator Concern Reports Number of Commercial Installations

Springfield Kelvinator Sales, Inc., Springfield, Mass., have installed two large walk-in coolers and three freezer cases at the Connecticut Cash Market, Athol, Mass. They also report the installations of a walk-in cooler and an ice cream cabinet at the Fitchburg Country Club, Fritchburg, Mass., and walk-in coolers at the new Horten's Delicatessen Store in Springfield and the Holyoke Hotel, South Hadley, Mass.

Hajoca Corp. Opens Two New Display Rooms

A display location in the Burlington Arcade, 1420 Chestnut St., Philadelphia, Pa. has been leased by the Hajoca Corp., Electrolux distributors. They have also opened new display quarters at 127 North 5th St., in Reading, Pa.

Bitte Sehen Sie Seite 12
GESELLSCHAFT MARKWELL

REFRIGERATION MEN MEET WITH CHICAGO BUREAU OF HEALTH

(Concluded from page 1, column 3)

Machine Co.; Thomas Coyle, Roessler & Hasslacher Chemical Co.; R. G. Nelson, Rice Products Corporation; E. T. Williams, Servel Corporation; C. J. Tanger, Servel Corporation; C. Cappels, Stover Co.; H. W. Rasmussen, Williams Ice-O-Matic Co.; O. H. Anderson, Zerozone Corporation; I. M. Knight, Department of Health; T. J. Claffy, Department of Health; Joel I. Connolly, Department of Health.

The minutes of the meeting of June 13 were read.

Mr. Connolly outlined the health aspect of mechanical refrigeration and emphasized the importance of keeping in mind all matters pertaining to mechanical refrigerators, especially in homes. He gave an outline of a number of the complaints received in the past few months concerning the operation of mechanical refrigerators, and stated that these complaints were not confined to any individual make of machine but that they covered machines manufactured by several concerns. He also outlined the difficulty in testing an installation after it has been in use.

Williams Tells of New York Meeting

Mr. Williams of the Servel Corporation related what transpired during a two-day meeting held in New York this week and discussed at length the proposed code on tests which is under consideration by the American Standards Association. He stated that those who attended the New York meeting practically agreed on the feasibility of applying the New York requirements with particular reference to conduits and control valves on individual cooling units. Mr. Williams had a photograph of the control valve mentioned, which showed the method of installation in connection with conduits and sealed branch openings. A sample valve was passed around for inspection by those present. A cut-out section showed this to be a packless valve so constructed as to be as leak proof as it is possible to make such a valve.

Mr. Coyle of the Roessler & Hasslacher Chemical Co. reported on tests made by the Bureau of Mines of the United States Government on guinea pigs and dogs. These are to be found in Bulletin No. 185 of the U. S. Treasury Department, which gives a fairly complete report of the result of tests made with various refrigerants.

A discussion was then had which developed into some of the health aspects involved in mechanical refrigeration. Mr. Williams related an experience he had in September, 1928, while attending a Coroner's inquest into the cause of three deaths, which were supposed to have been the result of escaping refrigerants. A canary bird that was in the room with the victims was not affected in any way.

Causes of Leaks

In the discussion which followed respecting leaks, it was stated by one present that these are usually caused by service men, although in many instances the use of the ic pick by the housewife in an effort to obtain ice is a direct cause of leaks.

Mr. Hayes, in discussing leaks, suggested consideration of the possibility of limiting the charge to an amount that would be harmless if released all at one time in a building; he maintained that the system could be made tight at the time of installation.

In a further discussion on leaks, Mr. Williams stated that in many instances leaks are due to incompetent workmen. He stated that in the standard method of testing a vacuum test is applied first and then a pressure test. This method is usually applied in new installations. In the application of a pressure test he thinks it not practicable to use air but that CO_2 or nitrogen in flasks under high pressure should be used.

Pressure Test Not Practicable

A question was asked if it were not possible to apply a pressure test to a system that had been in use for some time if suitable valves and by-passes were provided, and Mr. Hayes, in answer to this question, stated that this was not practicable; that it would require a whole day or longer to test a system as it must first be emptied of the refrigerants, and that it was a dangerous process in any event. Test gauges are impracticable because of the gases in the systems and the construction of the gauge.

Mr. Connolly then requested the opinion of the group relative to the amount of refrigeration that should be used in a system. Mr. Williams in discussing this stated that it was the opinion of the A. S. A. that no more than 20 lbs. should be charged in an ordinary system. Mr. Cappels then cited an instance where an intoxicated man went to an ice-box that was charged with 600 lbs. of methyl chloride and because he could not get a suitable drink he pulled the refrigerating unit and broke connections, thereby releasing the charge. He then stumbled and threw himself across a bed where he was found by the police with practically no ill results from his experience. This statement was not taken seriously. Mr. Cappels stated that be believes the amount of charge in a system is immaterial.

It was suggested by the chairman that a local committee be formed which would be representative of the industry and which would work with the Department of Health in its effort to solve the problem with which it is confronted. Mr. Williams stated that he did not believe such a committee would be desirable and suggested working with the standing committee of the A. S. A., which is now functioning. He suggested that in preparing a code for the regulation of refrigeration final action be postponed until the findings of the A. S. A. are approved.

Further suggestions on the appointment of a small local committee representative of the service men of the different manufacturers were made. It was finally agreed that the manufacturers name a committee of local service men to work in conjunction with the Department of Health and that both committees in turn work with the standing committee of the A. S. A.

On request of Mr. Connolly it was agreed to send a copy of the minutes of the meeting to the Editor of ELECTRIC REFRIGERATION NEWS at Detroit.

The meeting adjourned at 4 p. m.

LOCAL COUNCILS ARE ORGANIZING FOR FOOD PRESERVATION DRIVE

(Concluded from page 1, Column 2)

received from many regional and local organizations.

Particularly intensive work in this line has been done in Minneapolis and St. Paul, where H. E. Young, of the Northern States Power Company, Regional Director, has been working out plans for participation of the Twin Cities in correlation with the national Program. Extensive use of the thermometer with the fifty degree danger mark—the insignia of the National Food Preservation Program—is planned in the drive to acquaint residents of that territory with the requirements of health from the standpoint of refrigeration.

Besides the thermometers, which are designed to be placed in the refrigerator so as to show the temperature within it, other tie-up materials are to be furnished, or have already been made available, designed to give every industry concerned in the matter of proper food preservation an opportunity for close cooperation with the National Program. Through the use of these tie-up materials, the close linking of the activities of the local council with the National Council, and the direction of the benefit of the national advertising to the local units affiliated with the Program, is assured.

The tie-up advertising materials approved, which are listed in the Plan Book of the Program, are:

The booklet which contains information for the contestants in the National Idea Contest; publicity articles, which will be furnished to local councils, based on interviews with nationally known health authorities and other subjects related to preservation of food; newspaper advertisements in mat form provided without cost to all participants in the Program; refrigerator thermometers featuring 50 degrees as the danger point; twenty-four-sheet posters for local participants, paper furnished free by the National Council; truck banners; continuities for local radio broadcasts; cards for window display; milk bottle jackets; prepared speeches on food preservation for delivery before Women's Clubs, Civic Organizations, etc.

With the preliminary work well under way, and the advertising in national magazines scheduled, the national movement to make American people conscious of the need for proper food preservation, and for keeping foodstuffs at a temperature between 32 and 50 degrees, is building up a sure and substantial foundation for the impressive public program centered in September. Through the national essay contest, through local contests tying up with that national contest, through local tie-up advertising, and speeches, welfare activities and similar undertakings in the local field, each and every unit in all the industries concerned will be closely linked with the national movement, so that the fullest possible benefit from it will accrue to each of them.

NEW PACKAGE DESIGNED FOR KEEPING ICE CREAM IN FREEZING CHAMBER

(See photo. on Page 1)

To increase package ice cream sales in Detroit the Fred Sanders Co., retail chain operators, who claim the origination of the ice cream soda, have recently designed an ice cream Ice Tray Package which fits into the tray in the freezing chamber of electric refrigerators.

This carton which thus far has been a boon to ice cream sales is being offered in two sizes, pints and quarts. The pint size measures eight inches long, three inches wide and one and one-half inches thick. The quart packages have the same dimensions excepting the thickness which is three inches.

The container is made of light cardboard waxed both inside and outside. When filled with ice cream the package is sealed in wax paper and its contents are kept free from moisture. Directions for placing the Ice Tray Package state that the container should be placed in the lowest tray if possible. The package is finished in a modernistic design on a green background.

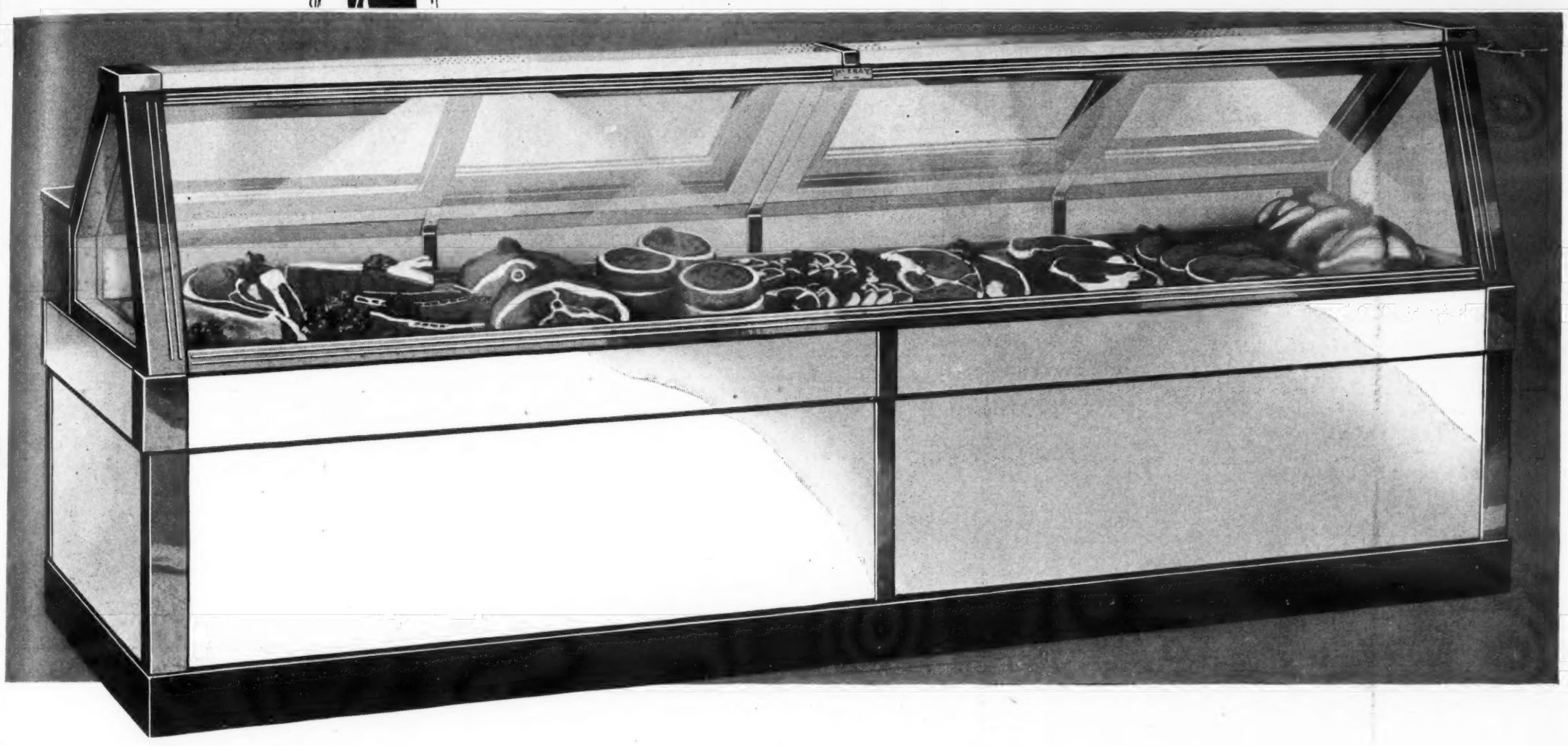
This special carton is also coupled with the Sanders solid carbon dioxide service. The solid CO_2 service carries a four-hour guarantee against melting.

When the ice cream is to be taken home the Ice Tray Package is placed in a heavy cardboard carton. Two small perforated cardboard disks containing the solid carbon dioxide or Dri-Kold are placed in the carton at the ends of the flat package.

"We have found" said Fred W. Sanders, "through experiment that with the new package, the home use of ice cream has been increased due to the fact that the housewife can lay in a supply one day for use on the next day. We find that not alone does the ice cream remain cold and firm indefinitely, but that it actually mellows in quality.

McCray's *Latest* and *Finest* Refrigerator Display Case

For Use With Any Machine



WITH gleaming white porcelain exterior, Monel metal trim, and black base, the new McCray No. 105 Display Case shown above represents the finest in refrigerator display case equipment.

Handsome in appearance, easy to keep shining and spotless, the No. 105 enhances the interior of any store. A maximum display is afforded by two courses of plate glass correctly sloped. Concealed lighting gives daylight vision in the case at all times. The convenience of selection attracts customers.

The efficient McCray cooling system maintains the correct temperature consistently, thereby doing away with spoilage losses. Foods are kept pure, wholesome, and tempting.

Machine refrigeration of any type may be installed at once in the No. 105 as with all McCrays.

No changes are necessary. The sterling in-built quality which has characterized the name McCray for 40 years insures the most satisfactory performance of any refrigeration unit. Pure corkboard insulation sealed with hydrolene cement is used in every McCray.

Food merchants know that McCray equipment means more profits and satisfied customers. This prestige and the fact that McCray is the world's largest manufacturer of refrigerators for all purposes is of special value to dealers in mechanical refrigeration.

McCRAY
REFRIGERATORS
FOR ALL PURPOSES
For
Grocery Stores·
Meat Markets·
Hotels · Restaurants · Hospitals·
Institutions··
Florist Shops·
Homes · · · ·

For in the McCray line they find the exact models to fit every need. And machine refrigeration with McCray means an efficient, satisfactory installation.

All dealers in machine refrigeration should get the facts now regarding the McCray line. Write for catalogs. No obligation to you, of course.

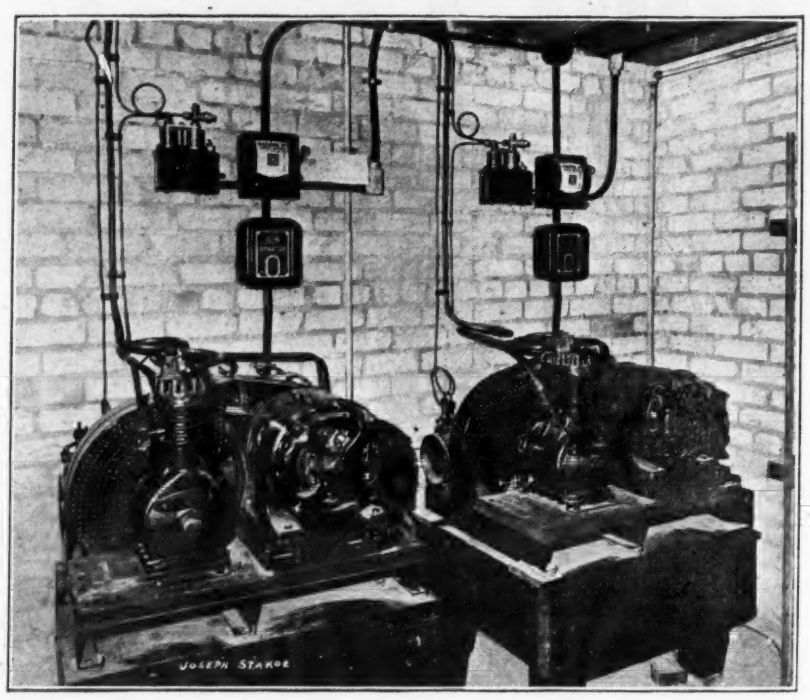
McCRAY REFRIGERATOR SALES CORPORATION
Dept. 66, Kendallville, Indiana
Salesrooms in All Principal Cities *(See Telephone Directory)*

A food store in Columbus, Ohio, showing a typical McCray installation

WORLD'S LARGEST MANUFACTURER OF REFRIGERATORS FOR ALL PURPOSES

McCRAY REFRIGERATORS

Kelvinator Distributor Installs Two Units in Detroit Market



Two Kelvinator compressors and five cross fin cooling coils have been installed by Dalrymple-Kelvinator, Detroit distributors, in Joe Stakoe's market located at 10690 West Warren Ave., Detroit. Two twelve foot display cases each with a cross fin coil are operated by a twin cylinder, W. B. water cooled compressor with a rating of one horsepower. An 8'x8'x10' Banta cooler is refrigerated by a W. B. one horsepower water cooled compressor. Loops which can be seen in the high side allow play for repair and also act as oil traps, keeping oil out of the pressure control. This installation is equipped with an American Radiator Mercoid control.

ANALYSIS REVEALS THAT 5% OF 529 FARMS HAVE ELECTRIC REFRIGERATION

Five per cent of the electrified farms have electric refrigerators according to analysis recently completed by *Woman's World*. This ratio is the same as for urban homes, while ten per cent have electric ranges, as against only seven per cent in the town studied.

The complete list of domestic appliances the 529 farms reported on is as follows:

Washing machines, 350 or 66 per cent.
Vacuum cleaners, 220 or 42 per cent.
Curling irons, 197 or 37 per cent.
Toasters, 185 or 35 per cent.
Fans, 72 or 14 per cent.
Electric percolators, 66 or 13 per cent.
Electric grills, 53 or 10 per cent.
Electric ranges, 52 or 10 per cent.
Heaters, 50 or 9 per cent.
Electric refrigerators, 24 or 5 per cent.
Electric fireless cookers, 12 or 12½ per cent.

Of the appliances purchased, 11 per cent were procured from the local light and power companies, while 47 per cent were bought from dealers in the nearest home town.

Robinson Refrigerator Works Plans Expansion

Robinson Refrigerator Works have leased approximately 28,000 square feet of floor space in the Cook industrial district, Chicago. A new building to contain 35,000 square feet, with provision for expansion up to 60,000 square feet is contemplated.

All Should Read It

"Your paper is very interesting. All who are connected with refrigeration work should read it."—Thomas Terry, Oak Park, Ill.

GOVERNMENT TESTS REFRIGERANTS FOR RELATIVE TOXICITY

Exposure of Guinea Pigs to Gases Gives Interesting Results

THE United States Public Health Service at Washington, D. C., in its public health bulletin No. 185 issued in March, 1929, describes a study made of the physiological response and relative toxicity of vapors of methyl bromide, methyl chloride, ethyl bromide, and ethyl chloride in air, as determined by exposure of guinea pigs to the gases. These experiments were conducted to give information relative to the concentrations and periods of exposure which produce no effect or but slight effect, moderate effect and serious effects throughout the range from low to high concentrations of vapors in air.

Cooperative Investigation

This cooperative investigation was conducted by the Dow Chemical Co., the National Research Council and the Bureau of Mines. The experiments were performed in two gas-tight chambers. The smaller chamber was of 19.3 cu. ft. capacity and was used for roughly ascertaining the toxicity before starting the experiment with a given compound and also to reduce the volume of gas when making exposures with vapor-air mixture within the explosive range. The large chamber had a capacity of 250 cu. ft. and several groups of six guinea pigs each were simultaneously exposed.

After the various groups of animals were placed in the chamber it was necessary to evaporate a quantity of material therein. This quantity was the calculated amount necessary to give the desired vapor-air mixture. Materials that were liquids at room temperature and pressure were measured in the ordinary graduated cylinder, but those which were gases at room temperature and pressure were liquefied in a graduated condensing bulb immersed in a low-temperature bath (solid carbon dioxide-acetone). In either case the desired amount of liquid was evaporated by pouring in a large flat surface in the chamber. The air was continually stirred with a fan throughout this procedure as well as during the remainder of the test. Samples of the air-vapor mixture were repeatedly taken for analysis.

Observed for Physical Signs

All the animals were observed throughout the test for physical signs and symptoms. At the end of the predetermined time of exposure for a given group of six animals, they were removed. The same tests were conducted with all four of the compounds, namely methyl bromide (CH_3Br), methyl chloride (CH_3Cl), ethyl bromide (C_2H_5Br) and ethyl chloride (C_2H_5Cl).

For short exposures to high concentrations, the report states, that ethyl chloride was found to be the least toxic and methyl bromide the most toxic of the four compounds. Under the same conditions methyl chloride and ethyl bromide occupy the intermediate positions, and though the difference is not marked, ethyl bromide appeared to be the more toxic. In the case of long exposures to comparatively low concentrations of vapors of these compounds in air, ethyl chloride was again the least toxic and methyl bromide the most toxic. For long exposures to low concentrations the ethyl compounds were less toxic than the methyl compounds; however, in the case of short exposures to high concentrations this relation does not exist.

The pathology for all compounds was in many respects similar and was characterized by congestion, hemorrhage, edema of the lungs, and by injury to the vascular system as shown by the tendency toward hemorrhage. After long exposure to low concentrations degenerative changes were noted in most organs.

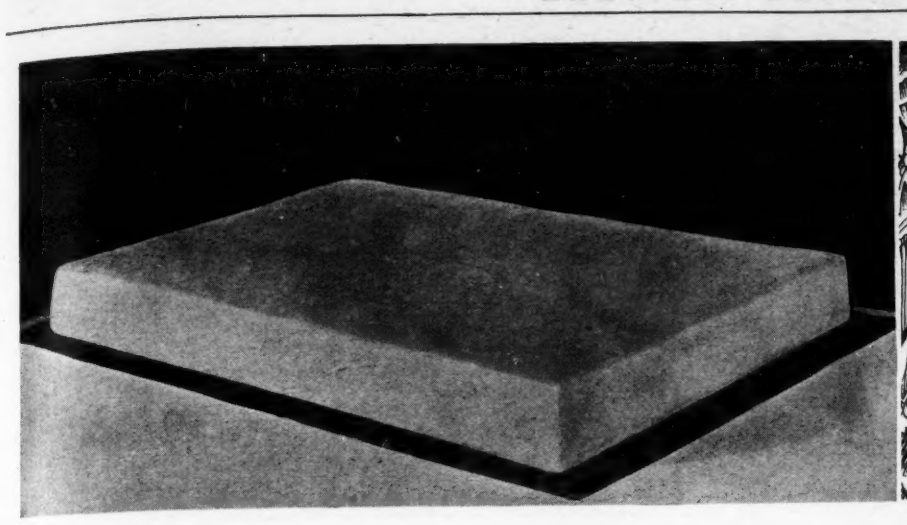
Symptoms produced by methyl chloride, methyl bromide and ethyl bromide as indicated in the general summary were similar. For exposure to high concentrations of vapors, the symptoms were chiefly of an anaesthetic character, that is, excitement, rapid loss of equilibrium, inability to walk, struggling and running motion of the legs. With low concentrations of vapors and long exposure the principal symptoms were weakness, rapid pulse, convulsive rapid respiration, with rales and in some cases frothy exudate from the nostrils. The symptoms attending exposure to ethyl chloride were similar to the foregoing, excepting that the signs of lung irritation were not pronounced. Excitement and restlessness appeared to be greater with the ethyl than with the methyl compounds.

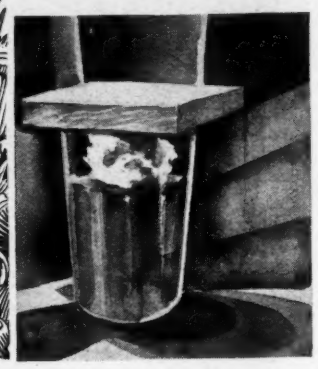
After exposure, the anaesthetic effect produced by high concentrations disappeared rapidly, but symptoms produced by long exposure to low concentration, such as weakness, rapid respiration, and pulse usually ensued one to four days later.

The summary states that from these experiments it appears that methyl bromide and methyl chloride, at least, and possibly ethyl bromide and ethyl chloride, do not possess sufficient warning properties to prevent serious voluntary exposure. To give a greater sense perception, the addition of chemical warning agents to these compounds is suggested. Although methyl bromide is not considered as a refrigerant, it may be added to other inflammable media for the purpose of reduction of explosion hazards. Ethyl bromide may also be employed to reduce the explosion hazards of other media.

With ethyl chloride, as well as with the other compounds, a person might tolerate exposure to high concentrations until rendered helpless. In all exposures to high concentrations a dizziness and possibly some discomfort in breathing would be experienced, but this effect would in all probability be tolerated by workmen in their zeal to make repairs. In the case of high dilution of the vapors in the air the warning property of methyl chloride, methyl bromide, and to a considerbale extent of ethyl chloride is apparently inadequate.

Vedesi pagina 12
COMPAGNIA MARKWELL





MAKE THIS MOISTURE TEST

Dry-Zero does not absorb water. Tests by the University of Minnesota and other recognized authorities conclusively establish this fact....For your own satisfaction, make this test yourself....Take a glass ¾ full of water. Place a small amount of Dry-Zero on top of the water, cover the glass and let it stand undisturbed as many days, weeks, months or years as you wish. At the end of your test you will find the Dry-Zero as free from moisture as the day you put it in. The same fibre which comprises Dry-Zero is used in U. S. Navy Life Jackets.

From the field *come these remarkable records of* Dry-Zero's *performance!*

ZEROZONE CORPORATION
939-1011 EAST NINETY-FIFTH STREET
Phone Cheltenfield 0120

Zerozone Electric Refrigeration

CHICAGO, ILL. May 29, 1929

Dry-Zero Corporation
130 North Wells Street
Chicago, Illinois

Attention: Mr. R. H. Ring

Gentlemen:

Will you kindly send us 500 copies of your semi-technical bulletin No. 8 entitled "Condensation Moisture in Insulating Walls"? We want to send these to our distributors and dealers, since we feel that they should know the facts about insulation in order to talk intelligently on this subject to customers. Your bulletin No. 8 will give them this information in the best possible manner.

You may be interested to know that the adoption of Dry-Zero Pliable Slab in all of our electric refrigerator cabinets has not only increased the over-all efficiency of our unit 16-1/4% and reduced the weight of the smallest cabinet 33 pounds, but it has also effected a marked saving in factory production cost. This saving we are glad to pass on to our customers in the usual manner.

Yours very truly,
ZEROZONE CORPORATION
President

CEJ:EB

ILLINOIS REFRIGERATOR CO.

AUTOMATIC REFRIGERATORS

MORRISON, ILLINOIS

May 27, 1929.

Dry-Zero Corporation,
130 North Wells Street,
Chicago, Illinois.

Attention Mr. Pearce.

Gentlemen:-

We are enclosing our purchase order No. 8994 covering Dry-Zero for 2000 cabinets for our next month's production.

While on the subject of Dry-Zero, I want to say that never in the history of our business have we ever used an insulating material in our factory that was as easy to apply as your Dry-Zero pliable slab already cut to size. With the sealing sheet attached to each slab, it has been possible for us to hermetically seal each slab in place with the least possible labor, thereby preventing the entry of moisture or even air under the most severe conditions.

Please send us three more of those sealing rollers, as our men in the factory find them very useful.

Yours very truly,
ILLINOIS REFRIGERATOR COMPANY.
Vice-Pres. & General Manager.

ADDRESS ALL COMMUNICATIONS TO THE COMPANY

THE WAYNE HOME EQUIPMENT COMPANY

Wayne ELECTRIC REFRIGERATORS

CABLE "WAYNOQUIP" ADDRESS

FORT WAYNE, INDIANA, U.S.A.

Wayne OIL BURNERS

May 24, 1929

Dry-Zero Corporation
130 North Wells Street
Chicago, Illinois

Gentlemen: Attention: Mr. Harvey B. Lindsay, Pres.

Yesterday, during a lull in things, I found myself jotting down some of the changes which have occurred since the Wayne Home Equipment Company adopted Dry-Zero as standard insulation in Wayne Refrigerators. I thought perhaps these notations would be interesting to you.

In the first place, we have found that dealers and distributors were quick to see the selling advantages in a refrigerator containing what national authorities say is the best insulation. One distributor wrote us that "It gives us an entirely new sales lever and literally lifts the Wayne out of the class of the ordinarily-insulated refrigerator. We find that customers are asking more and more about insulation before they buy."

Dry-Zero has reduced the running time of our unit 17% and that is a big factor that is being used to great advantage by our sales department. Dry-Zero has completely eliminated odor troubles for us and tests made on permanence and moisture absorption have proved its superiority in these respects.

Our entire organization is on its toes and all pepped up over what some of your competitors once told us would never work to our advantage.

Yours very truly,
WAYNE HOME EQUIPMENT COMPANY
General Manager

JAB:KF

ALL CONTRACTS MADE BY OUR SALESMEN ARE SUBJECT TO ACCIDENTS BEYOND THE CONTROL OF THIS COMPANY

DRY-ZERO is a scientific product....It has a wonderful record of efficiency, permanence and saving in many fields of refrigeration. In the comparatively short time since Dry-Zero was introduced to the automatic refrigeration industry ....it has made tremendous strides. Many were quick to see the advantages that must inevitably result from its use....The reduction in running time made possible by its greater insulating value ....The elimination of troublesome insulation odors by the clean, sanitary glass smooth fibres from which Dry-Zero is made....The easy application from the perfected sealing slab....The sales advantages from the permanence of the material....and many more which salesmen themselves have crystallized.

Others, a bit slower in their judgment, waited... but even they could not withstand the success of the scientific evidence which has established Dry-Zero so clearly as the foremost insulation for automatic refrigeration.

True, Dry-Zero has not been the exclusive choice of all. Nor will it ever be. As long as there are individuals, there are differences of opinion. But when opinion is laid aside and the insulant chosen on the basis of scientific facts, the selection of Dry-Zero has resulted.

The final result is that Dry-Zero is without question destined to supersede materials of lesser efficiency and permanence. Already from the field come remarkable records of performance.

May we send you full information?

DRY-ZERO CORPORATION

130 No. Wells St. Chicago, Ill.

Comparative Values—

established by U. S. Bureau of Standards, Armour Institute, State Universities and other impartial authorities.

Material	Wt. cu. ft.	Insulation Value	Absorption*
DRY-ZERO	2 lbs.	4.15 to 4.3	14
Corkboard	9.5 to 13 lbs.	2.9 to 3.3	28
Wood fibre board	13 lbs.	2.9 to 3.2	115
Flax fibre board	13 lbs.	3 to 3.2	
Cane fibre board	15 lbs.	2.7 to 2.9	78
Mineral wool slab	17 lbs.	2.6 to 2.8	

*Test run by University of Minnesota.

DRY-ZERO

ELECTRIC REFRIGERATION NEWS

The Business Newspaper of the Refrigeration Industry

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JULY 3, 1929

Study Your Ratios

"YOU can learn a lot from figures," said the president of a large corporation to one of his young departmental managers. As he spoke, he looked up from a single page on which was tabulated the totals and percentages which revealed to him the strong and weak points in an organization of over one thousand members. "For example," he said, as he pointed to two items on the page, "here are the sales of two departments which have, to a large extent, the same customers. One is gaining while the other is losing. Looking at the figures it would appear that department A is making its gain by taking business away from department B. If that is true, then there is no net gain for the company as a whole. Now, there may be some other reason for the gain of department A and the loss of department B, and a study of the sales records of the two departments will show whether my first guess is right or wrong." Thus the captain of industry gave his lieutenant a lesson in "reading figures."

Knowing how to "read figures" is one of the secrets of the big business executive's ability to know what is going on in the remotest part of his industrial domain. Gains and losses, compared with previous periods, show whether production, sales, shipments, collections and other progressive steps are going forward in proper order. Percentages showing the relation between the various elements in the cost of doing business point an accusing finger toward any operation which is not up to the standard of efficiency.

Bankers who have an opportunity to observe many varieties of business become adept in interpreting the meaning of the figures in a balance sheet. Some bankers claim that they can find out all they need to know about a business from a study of its financial statements. As a result of experience theoretical ratios are set up to indicate conditions which are known to be sound and profitable, and these indices serve as a basis for comparison of the results being secured by a particular concern.

One of the handicaps to a new industry is the lack of established ratios which may be used as a guide to successful control in the various stages of development. The figures determined by an old and substantial corporation are of little assistance to a young and struggling partnership. The cost of selling a well-known staple has little bearing on the expenditure necessary to market a new, high-priced specialty.

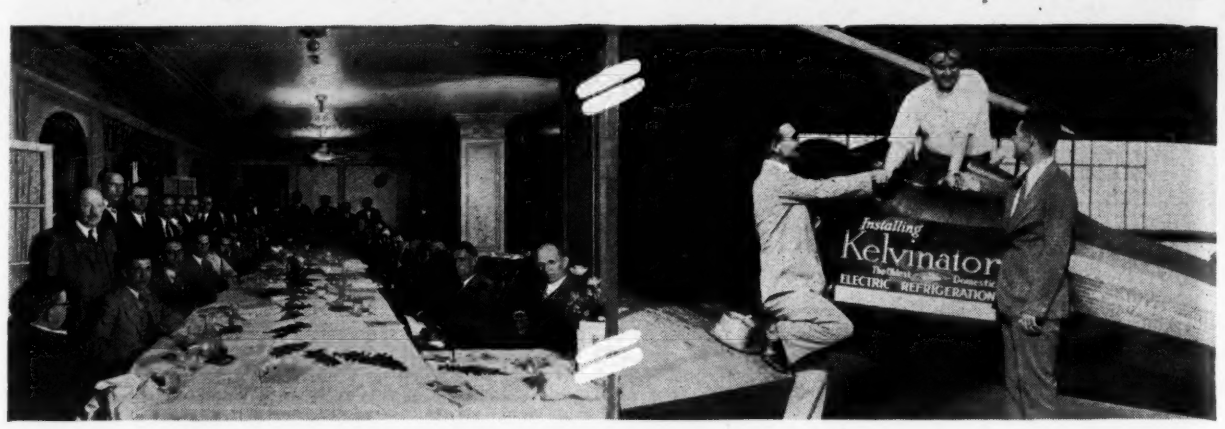
The management of a new business, however small and however unusual may be its problem, will make no mistake by beginning at once to collect the essential figures pertaining to its operation. As time goes on this data, and that secured on other similar lines of business, will prove highly valuable as a chart for steering the enterprise in a safe and profitable channel.

Electric refrigeration distributors and dealers would be greatly benefited by the availability of statistics on the average results of retail operations in this particular field. Such figures can be obtained only through the cooperation of the dealers themselves. As a preliminary to the collection of such statistics it is necessary to set up a standard accounting system. Otherwise, it will be impossible to correlate the data. The Refrigeration Division of the National Electrical Manufacturers' Association can perform a great service to the industry by working out a standard accounting system. Electric Refrigeration News will be glad to assist in promoting the movement, and with this thought in mind extends an invitation to readers to contribute their ideas and experience on the subject.

Looking forward to the time when there is a definite understanding as to the precise meaning of the various accounting terms, it will be possible for dealers in the same, and in neighboring communities, to learn much from each other by exchanging information. The ability to converse in a language which permits competitors to reveal only that part of their business affairs which they are willing to have known will encourage the discussion of common problems and other matters of mutual interest.

Salesmen also, should be stimulated to study ratios—particularly the ratio of sales to calls. Probably the most important moment in the life of a specialty salesman is when he discovers that he can average one sale in every so many calls. Once the salesman becomes convinced that he can accomplish this feat he attains a viewpoint of immeasurable significance. It gives him the ability to approach each prospect with the same confidence and enthusiasm and makes it impossible for unresponsive prospects to disturb his determination to make the quota which he has set for himself.

Lindbergh Pupil Flies to Kelvinator Meeting



Left above: Stratton & Terstegge Kelvinator banquet, Louisville, Ky. Right above, left to right: Wm. C. Stephenson, domestic sales representative of the Kelvinator Sales Corporation; Clarence Young, salesman in the Kentucky "Blue Grass" district, and owner of the plane; Paul Terstegge, president of Stratton & Terstegge.

IT developed at a recent convention of Kelvinator dealers and salesmen operating under Stratton & Terstegge of Louisville, distributors for the "Blue Grass District" of Kentucky, that Clarence Young, of Central City, Ky., is one of the few men who have been taught the art of flying by Col. Charles A. Lindbergh. Mr. Young piloted his new Waco plane to Louisville to attend the Kelvinator gathering, which numbered about 45 men, including the factory representatives. During the course of the convention Mr. Young took Paul Terstegge, president of Stratton & Terstegge, and William C. Stephenson, domestic sales representative from the factory, for an air tour.

The circumstances under which Mr. Young learned to fly were revealed during the convention. It seems that he had gotten hold of some liquid capital for which there was no immediate use and, having flying aspirations, decided to invest it in airplane instruction. He proceeded to St. Louis and engaged the services of the then unknown air mail pilot Charles A. Lindbergh, who was glad enough to take the ambitious pupil in hand. The lessons were given on Robinson field. It is related that the hangar on that field was, at that time, nothing more than a ramshackle cow-shed. Robinson field is now one of the best in the country.

Mr. Young told an interesting story of his instruction by "Lindy." He recalled the fact that the weather was so cold that frequently both pupil and instructor had to pour hot water on the engine before the plane could be gotten into action.

A banquet, with Stratton & Terstegge as hosts, concluded the Kelvinator meeting at Louisville. Sales talks were made by Fred Foersterling, Detroit, midwest district manager of the Kelvinator Sales Corporation; by Wm. C. Stephenson, Detroit, domestic sales representative; by Danner Bierhaus, factory commercial sales representative; and by Thomas H. Mason, advertising manager for Stratton & Terstegge.

PENN. STATE GATHERS DATA FROM TESTS ON DAIRY INSTALLATIONS

SEVERAL members of the American Society of Refrigerating Engineers attending the Spring Meeting at State College, Pa., made an inspection trip to four farms in the neighborhood of the College where dairy refrigeration installations are being checked by the Engineering Department of the College.

The first stop was at the Myers farm where a one-half-ton York unit is installed in a modern and newly-built dairy house. This farm has the advantage of cold spring water which is used for precooling the warm milk. The upper coils of the precooling apparatus are chilled by the spring water and reduce the temperature from about 95 degrees to 65 degrees. The milk then flows down over coils refrigerated by brine from the machine, further reducing the temperature to approximately 45 degrees. While no record of the quantity of milk passing through the cooler was available the consumption of electricity from May 1 to June 1 was 134 kilowatt hours.

At the Wasson farm a one-half-ton York unit is also installed and spring water is used to supplement the brine in the precooling coils. The record kept here showed that 176 kilowatt hours were consumed from May 1 to June 1 and that an average of 350 quarts of milk per day are cooled by the equipment.

At the Strouse farm, also having a one-half-ton York unit, no spring water was available but this installation has a home-made cooling tower. No precooler is used but the milk is placed in five gallon cans and these in turn are immersed in the chilled water of an insulated tank sunk in the floor of the dairy house. A motor-driven pump is used to stir the water in the tank. 156 kilowatt hours were consumed from May 1 to June 1 to refrigerate an average of 117 quarts of milk per day.

The last installation inspected was at the Markle farm where a Kelvinator unit is used in connection with an Esco Cabinet. In this case the cans of milk are also immersed in water but no pump is used for circulation purposes. The record shows that 125 kilowatt hours were consumed during the month with an average 114 quarts of milk per day.

The four installations revealed a marked contrast in the character of the buildings. At the Myers farm the building was new, specially constructed for the purpose with a large cork-insulated cooling compartment, cement floor and with the interior lined with insulating wall board. The interiors of the Wasson and Strouse dairy buildings were also lined with insulating wall board but the Markle installation was in an ordinary farm out building.

Records will be kept by the Engineering Department of the College to determine the relative efficiency of the different installations and will, in time, provide a basis for recommendations as to the economy to be gained by additional expenditure.

REFRIGERATOR MEN TO LIMIT SIZES OF ICE COMPARTMENTS

A simplification program, covering sizes of ice compartments for domestic refrigeration, was approved by a general conference held in Washington on June 26th, according to an announcement of the Department of Commerce. This conference of manufacturers, distributors and representative users of refrigerators, ice manufacturers and dealers, and others interested in the proposal, was held under the auspices of the Division of Simplified Practice, of the Bureau of Standards at the request of refrigerator manufacturers.

The simplified schedule, as approved by the conference of June 26th, covers dimensions of ice compartments of domestic refrigerators of the side icer and front icer types, which will be considered as minimum standard sizes by the industry. Standard types of domestic refrigerators are defined as follows:

Side icers—three or four door cabinets, in which the ice compartment door is vertical, and opens at the front of the cabinet; front icers (also known as "Apartment Type"—two door cabinets, in which the ice compartment door is vertical and opens at the front of the cabinet.

In announcing the action of the conference in the development of this program, R. L. Lockwood of the Division of Simplified Practice said that this was the second simplification program developed by the refrigeration industry in its program of eliminating waste by reducing the unnecessarily large variety of products. The first program established five standard weights of ice cakes with a table of limiting dimensions for each weight, and is officially known as Simplified Practice Recommendation No. 96.

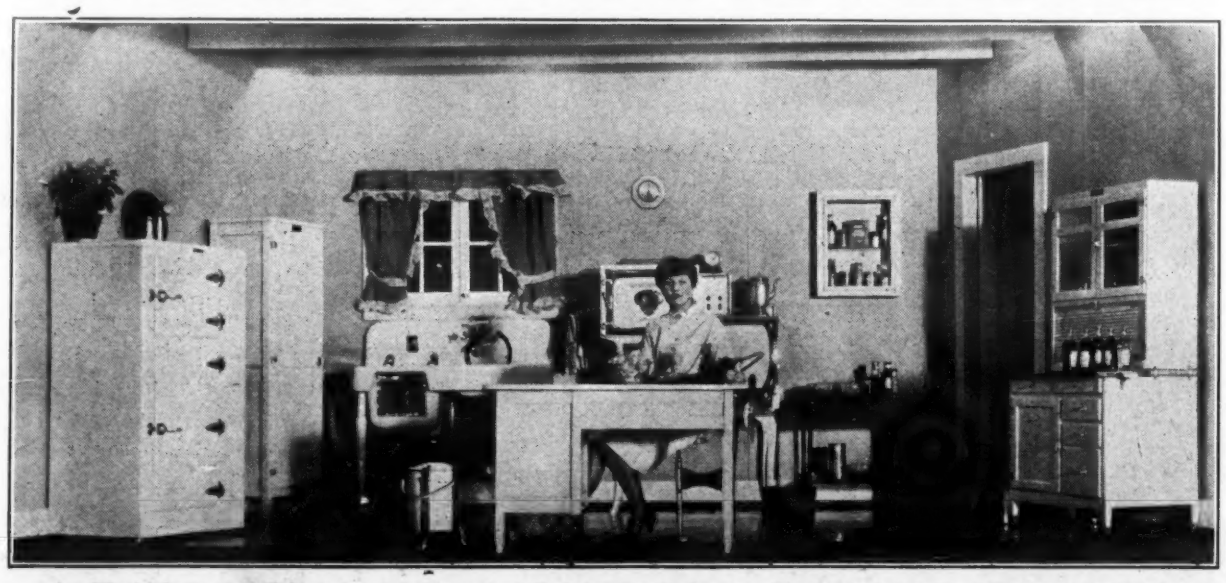
The program adopted June 26th becomes effective October 1, 1929, and will be subject to periodical review by the industry, through a standing committee, for any modifications that may be necessary to keep the program in step with the latest practice of the industry. This committee consists of F. H. Ryder, Harder Refrigerator Company, chairman; J. L. Gillard of the Alaska Refrigerator Company; Leslie C. Smith, secretary of the National Association of Ice Industries; J. F. Nickerson of the American Institute of Refrigeration, and Dr. Louise Stanley of the Bureau of Home Economics, Department of Agriculture.

According to the announcement of the Department of Commerce, the Division of Simplified Practice will shortly circularize the industry for signed acceptances to the program. When a sufficient number of acceptances representative of at least 80 per cent of the industry by volume of annual production, and a representative number of users have been received, the simplification will be assigned a simplified practice recommendation number, and will be printed in the "Elimination of Waste" series of the Division of Simplified Practice.

New England G. E. Salesman Closes Six Orders In One Day

Clyde Frye, salesman of the Electric Refrigeration Co. of New England, Boston, Mass., distributors of General Electric refrigerators, sold six refrigerators in one day. Previous to this he sold ten refrigerators in one week and a little while before he sold a refrigerator a day for 12 days in succession.

Food Economist Uses Electrolux Unit at Demonstrations



An Electrolux gas refrigerator has been installed in the lecture auditorium of the H. J. Heinz Co., Pittsburgh, Pa., where yearly thousands of visitors hear Miss Josephine Gibson, head of the company's home economics department tell how to prepare good things to eat.

Heating Permitted Northward March of Civilization. Will Refrigeration Turn This Tide?

Stevenson Delves Into Historical Background of Refrigeration; Notes Progress

An address delivered by A. R. Stevenson, Jr., of the General Electric Co., Schenectady, N. Y., before the banquet of the American Society of Refrigerating Engineers, at State College, Pa., June 21.

AT this convention, a special effort has been made to exhibit only apparatus having new features. It is, therefore, probably expected that I shall speak of new things. I will try to do so, but am hampered in such an endeavor by the old saying, "There is nothing new under the sun." I also realize that anything I will say about refrigeration will be an old story to many of the refrigerating engineers gathered here. Therefore, I will take a preliminary ramble into other fields, returning to the subject of refrigeration later.

In olden times, progress was so slow that ideas brought forth their fruit long after the inventor was dead and buried. It was also true that sometimes people had visions even long before the inventor overcame the last barrier between the vision and the practical reality.

Greek legends told of men with wings; and the Tales of the Arabian Nights describe a flying carpet. But the airplane is just now beginning to be of widespread practical value, twenty-five years after the first flight by the Wright brothers. Its possibilities, however, were well described by Sir George Cayley in 1854, who said: "I feel perfectly confident . . . that this noble art will soon be brought home to man's general convenience, and that we shall be able to transport ourselves and families and their goods and chattels more securely by air than by water and with a velocity of from 20 to 100 miles per hour."

Radio is another development of a vision. I do not know where it can be found, but I feel sure there must have been ancient legends where a father said, "Son, when you go into a far country, take this little box with you and every evening at sundown you can converse with me through it." To-day, Byrd is in a far country at the South Pole, and by means of the radio he converses frequently with his friends thousands of miles away. About half a century ago, it took a Clerk Maxwell, and then a Lodge, Flemming and Hertz, after them a Marconi, and then a host of others, before the radio telephone was brought to its present perfection and widespread use.

Within the last two days, I have flown with Dr. Alexanderson while he was testing his new radio-echo alimeter for use on airplanes. This illustrates the interdependence between the various branches of scientific development. Radio is necessary to the navigation of airplanes. Physics and chemistry are now necessary complements of each other. Refrigeration and electrical development are similarly intertwined. The household refrigerating machine of today would never have been possible without the electrical distribution systems, and the electrical distribution systems are profiting by the refrigeration load.

Our own field of refrigeration has shown a similar lag. The Greeks used snow, and the Egyptians used the evaporation of water to cool their food and drink. It was not until the nineteenth century, however, that refrigeration, even with natural ice, began to have a widespread and general application.

It is said to-day that modern industry and modern merchandising have speeded up the progress of an idea from the inventor to the public. There is a great deal of truth in this. A long period elapsed between the original discovery of electricity by the ancient Greeks and the introduction of electric light; but it was only a dozen years from the time Dr. Coolidge started working on tungsten until the Mazda lamp was almost universal.

With the speeding up of modern industry, developments in the refrigeration field came faster—the artificial ice plant in the last half of the nineteenth century, and the domestic refrigerating machine in the first quarter of the twentieth century.

Meantime, a new vision, the cooling of buildings, has arisen and partially matured. One of the past presidents of the Society, here in the room this evening, has been largley responsible for this. Large buildings, theaters, stores, hotel dining rooms, the Houses of Congress, etc., are being cooled. Just as in the refrigeration of food the large ice plant preceded the small domestic refrigerator, so in this field the air conditioning of large buildings merely precedes the application of refrigeration to smaller houses and individual rooms. A person, after sitting in a cool, dry atmosphere in a public building, cannot return to a hot, damp house for the night without longing for his own air conditioning apparatus.

Among the new things exhibited here to-day, I was very much interested to see the Carrier air conditioning unit and the X. L. refrigerating machine for cooling houses. There is at least one other company which has placed a room cooler on the market, and others have also been working on this problem for some years.

With the recent speeding up of progress, it will not take long for the development of suitable apparatus and the opening up of this large market for refrigeration. A new Tale of the Arabian Nights could be written in which a man gives his friend a little box with the magic property of maintaining a dry, cool atmosphere in any room in which it is placed. Who in this room would not have welcomed such a present during this last week of hot weather?

Refrigeration has already been of great service to humanity in the proper preservation of food. That service is still continuing and growing more widespread every day by leaps and bounds. But refrigeration can be of still greater future service in providing healthful living conditions, even in the hottest part of the tropics as well as in the temperate zones during the hottest summer weather.

Engineers May Have Hand in Changing Civilization's Course

In the August, 1928, *Harper's* Ellsworth Huntington describes the northward march of civilization as the human race learned to heat houses. It is fascinating to think that we, those of us here in this room, the refrigeration engineers, may have a hand in changing the course of civilization, making it possible for industries to flourish in future in the tropics as they do to-day in the temperate zones.

To be of service to humanity should, perhaps, be of sufficient reward. But in order to attract capital for investment in the service of humanity, it is necessary to have a reasonable prospect of profit. Fortunately, to-day there is a widespread belief in the principle that a group or organization benefitting humanity will almost inevitably reap its reward. The railroads helped move civilization westward across the continent. Lines stretched out, in some cases, through empty prairies. Where transportation facilities were provided the population increased. Thus the railroads have been reaping their well earned reward.

It is hardly necessary to point out the analogy. If the refrigeration industry can promote the prosperity of a large part of the surface of the earth, then the refrigeration industry will reap its reward.

ROWBOATS SUBSTITUTED FOR TRUCK IN DELIVERY OF G. E. UNIT BY ROCHESTER CONCERN

When the Wheeler Refrigeration Corp., Rochester, N. Y., closed an order with Mrs. Louise Wolf at Bay View, Irondequoit Bay near Rochester, for a General Electric refrigerator the problem of transporting the unit to the cottage had to be overcome.

The highwater made it impossible to use the road leading to the cottage. Rowboats were substituted for the motor truck on the last lap of the journey. The cabinet was loaded in one of the boats, while the unit and hoist were placed in the other boat and transported to the cottage via water.

Winners Announced in Electrolux Sales Presentation Contest

R. J. Wilson of the Illinois Power & Light Co., Decatur, Ill., has been awarded first prize for the best complete sales presentation in the Electrolux sales presentation contest. Fred Rich, Honolulu Gas Co., Ltd., Honolulu, T. H., won the honors for the best individual sales point on Electrolux.

Engineers Meet at State College

STUDY TRANSPORT OF REFRIGERATED GOODS

(Continued from page 1, column 1)

The brief session of the afternoon included a report in which several charts, showing temperatures prevailing in the various zones of the United States, was presented. This material provided by the Weather Bureau evoked much interest from those present. C. F. Belshaw, of the Geo. B. Bright Co., Detroit, discussed this matter and pointed out the fact that additional information involving wind velocities and minimum temperatures might be added to the data on weekly mean maximum temperatures and the humidities for the hottest week as covered in the chart's made available to members at this session. This report was followed by an illuminating lecture on electrical measuring instruments as applied to refrigeration. This paper covering a wide scope, was presented by C. Z. Rosecrans, head of electrochemical research, of the Leeds & Northrup Co., Philadelphia. Instruments of particular note are those giving automatic records of brine condition to aid the corrosion prevention in ice plants, and equipment to read relative humidities as low as 5 per cent.

The third paper, scheduled for the afternoon was presented at the first session Friday morning, by Professor F. G. Heckler of the College, an authority on heat transmission research, who spoke on methods in this work. He also gave a description of the thermal plant which he exhibited in connection with the meeting.

Constitutional Changes

At the session on Thursday afternoon the changes in the constitution of the Society, proposed by B. H. Coffey, consulting cooling tower expert of New York City, were unanimously adopted. This amounts to putting the voting power in the hands of the Council to be done by letter ballot after the names of candidates have been announced in the journal of the Society. This measure proved necessary due to the large number of applicants and the cumbersome procedure of the system it has replaced.

Secretary David L. Fiske spoke briefly, stating that the technical society of today ought to put its technical aims in the practical terms of economics and recognize, as its principal job, the work of making more money for its constituents. According to him the Society which failed to recognize this job would not do it or anything else. He defended this policy as an adequate ethical, as well as practical and ideal, amid the present developments of industry.

Refrigerated Transport

Friday morning, June 21, was devoted to a discussion of the economics of freight car refrigeration. This was a joint meeting of the Society with the Railroad Division of The American Society of Mechanical Engineers.

The opening address was an inspiring talk by Dean R. L. Sackett, in charge of the engineering school at State College. He discussed the relation between research and invention in a way which appealed to all the engineers present.

The first paper, presented by the A. S. M. E., was a general introduction to the symposium by J. W. Roberts on the Pennsylvania Railroad. This paper was supplemented by a written discussion which gave many details of the operation of refrigerated transport—all illuminating to the refrigerating engineer.

The second paper was written by Eugene P. McPike, manager of the Perishable Freight Service Division of the Illinois Central Railroad and a member of the Society. His paper was abstracted by Secretary Fiske, who summarized the points by saying that the railroads were performing a protective service only and not attempting to make a car do the work of a cold storage plant. He said the railroads do not know the intricacies of refrigeration beyond a certain point, nor do they know a great deal about the relation of temperature to ice weight or meltage. Considering the great number of commodities transported under standard conditions, it appeared to the speaker that the railroads were doing the best job possible, under the circumstances. A collection of statistical information gathered by Mr. McPike led him to conclude that one ton of weight added to refrigerator cars in operation increased the mere operating expense of hauling them by six million dollars a year, which figure ran larger than the entire claims paid by the railroad for food spoilage each year. On the basis of this he felt there could be no improvement in design if the increased cost had to be paid out of savings in the food.

Dr. Lon A. Hawkins closed the meeting with an elaborate and scholarly discussion of the factors in food technology which relate to refrigerated transport. This subject was of interest to the advocates of both the ice and mechanically cooled cars. The session was presided over by A. W. Oakley, chairman of the Program Committee and assistant manager of the technical staff of the Merchants Refrigerating Co.

The meeting of the afternoon of this day went further into the railway refrigeration problem, discussing the actual cars and equipment. The meeting was opened by E. A. Sweeley, of the Fruit Growers Express Co., Alexandria, Va., who was introduced by F. G. Grimshaw, works manager, Pennsylvania Railroad, Altoona, Pa. Mr. Sweeley gave the second paper presented on behalf of the A.S.M.E., treating in general terms the design of refrigerated cars. The discussion of this paper was extended to cover insulation, materials of construction, costs and design.

The second paper presented, was printed in the June issue of *Refrigerating Engineering*. This paper cover extensive research on the refrigeration of transit by means of a master car, in which a complete refrigeration engine room is installed. R. W. Waterfill, of the Carrier Engineering Corp., defended the engineering feasibility of this system against the criticism of practical railroad men, in a spirited manner. The closing paper was given by C. P. Goree, Atlanta, Ga., representative of the Frick Co. The paper covered the design of precooling fruit stations as used in the south and northwest, going into the subject in a thoroughly technical manner making available much new and valuable information.

An additional feature of these two sessions on refrigerated transport was the exhibition of two refrigerator cars; one of which was the property of the Safety Car Heating and Lighting Co., refrigerated by the silica gel process, the other owned by the Fruit Grower Express Co., and refrigerated by ice.

Refrigerator Session

The final day was devoted to a subject which might be called the technical background of the merchandising of refrigerators. The first paper by R. T. Frazier of the Tennessee Furniture Corp., Chattanooga, Tenn., covered refrigerator development from early times, up to the technical stage of research and design now prevailing.

F. M. Cockrell, editor of ELECTRIC REFRIGERATION NEWS, followed on the program with a talk on the relations within the refrigerating industries and the needs for co-operative research and educational activity along the line of public relations.

Miss Mildred Porter, of the Bureau of Home Economics of the Department of Agriculture, gave a more technical paper on methods of converting test results on refrigerators to a comparative basis, regardless of the temperature under which the test was conducted.

Slogan Defended as Adequate

Under the subject, "Why Test Refrigerators?", Dr. E. F. Mueller, physicist of the Bureau of Standards, discussed the factors going into the judgment of buyers, the effect of advertising and its relation to engineering reasoning, from the viewpoint of a scientist. At the conclusion of his talk, which covered a range of products, he discussed the new slogan, "50° the danger line," in food preservation. He demonstrated that this temperature is no more a danger line than any other point on the thermometric scale. In reply, the slogan was defended as adequate for advertising purposes in an endeavor to simplify the subject for

(Concluded on page 11, column 1)

Voir la page 12

ICE REFRIGERATOR MEN ARGUE MERIT OF 50° STANDARD

(Concluded from page 10, column 3)

the general public. This brought out a very active discussion.

The chairman of this meeting was H. D. Edwards, vice-president of the Society and works engineer of the Union Carbide and Carbon Co., New York City.

Entertainment

Thursday afternoon, the entire party journeyed to the college's Nature Study camp which is in the heart of a virgin forest, 17 miles from the village of State College. F. M. Torrence, chairman of the Entertainment Committee divided the group into two sections; one remaining at the camp for the various sports available and the other hiking through the mountains to the Alan Seegar Forest Monument.

A baseball game between the "Wildcats" and the "Bearcats" was won by the former with a score of 22 to 21. J. H. Browne of New York City, received the first prize for the outstanding individual player. This was awarded for his ability to use his feet as well as his hands.

The buckboard contest for the women was won by Mrs. W. H. Reish, State College, Pa. Second prize went to Mrs. C. F. Belshaw, Detroit, Mich., and the third prize to Mrs. George Hulse, New Haven, Conn.

The feature entertainment of the day was a rattlesnake fight, between a group of members and a 4 foot rattler, resulting in the death of the snake.

Banquet Friday Evening

Friday evening an informal banquet was held in McAllister Hall. Entertainment was provided by a college orchestra with Miss Martha J. Gobrecht as marimba soloist. The sleight-of-hand performance given by Robert G. Thrasher was educational as well as entertaining.

President Arthur J. Wood, acted as toastmaster, introducing the various speakers of the evening. The leading speaker was A. R. Stevenson, Jr., of the General Electric Co. Mr. Stevenson spoke of the developments of aviation, radio and refrigeration as forseen many years ago. He also gave a picture of what might be expected in the future of these three industries.

Other speakers on the program were: Ralph Dorn Hetzel, president of Pennsylvania State College and G. D. Ogden, general traffic manager of the Pennsylvania railroad. Mr. Hetzel spoke on the advantages of education showing some of the special features of the college. Mr. Ogden discussed the development of the Pennsylvania railroad pointing out the vast service it performs.

The toastmaster also called on R. A. Sackett, dean of the Engineering School and H. D. Edwards, vice-president of the Society, for a few words.

President Wood next called upon Crosby Field, who read a resolution, written in appreciation of the work done by local committees.

After the dinner an informal dance was held in the Women's Building. During the latter part of the evening, refreshments were served by the committee in charge.

The women were entertained during the technical sessions by a special committee under the chairmanship of Mrs. A. J. Wood. Thursday afternoon there was a special get-acquainted meeting at the Women's Building. Friday morning there was a drive about the campus and town and that afternoon there was a tea at the home of President Hetzel.

Committees

The local convention committee was under the general chairmanship of President Arthur J. Wood. He was assisted by the chairmen of the following commitees: Housing and Registration, H. A. Everett; Entertainment, F. M. Torrence; Exhibits, P. J. Reber and C. C. Cochran; Transportation, W. G. C. Thompson; Publicity, C. L. Allen; and Meeting, W. H. Reish.

The committee for entertainment of women consisted of: Mrs. Arthur J. Wood, chairman; Mrs. R. D. Hetzel, Mrs. H. W. Everett, Mrs. L. J. Bradford, and Mrs. F. G. Hechler

The patronesses were: Mrs. George Hulse, Mrs. Ezra Frick, Mrs. H. D. Edwards, Mrs. Glenn Muffly, Mrs. D. F. Keith, Mrs. Crosby Field, Mrs. I. E. McFarland, Mrs. M. B. Richardson, Mrs. Harry Sloan, Mrs. A. H. Baer and Mrs. George B. Bright.

Exhibits

The educational exhibits of new refrigerating equipment—a new feature—was pronounced a great success. Held in the mechanical laboratory there were many visitors during the three days of the meeting. Some of the outstanding features were: A silica gel refrigerated car owned by the Safety Car Heating and Lighting Co.; the gas liquefier, presented to the college by Linde Air Products Co., through H. D. Edwards; the air filtration apparatus shown by the Armstrong Cork and Insulation Co.; the air conditioning equipment of the Carrier Engineering Corp.; and the X. L. Refrigerating Co., and the dairy equipment of the Baker Ice Machine Co.

A complete exhibition of insulating materials was also shown. The complete list of exhibitors includes the following:

Carrier Engineering Corporation,
Armstrong Cork and Insulation Co.,
Frigidaire Corp.,
Builders Iron Foundry,
National Tube Co.,
Baker Ice Machine Co.,
Fruit Growers Express Co.,
X. L. Refrigerating Co.,
Linde Air Products Co.,
Savage Arms Corp.,
Servey Sales Inc.,
Safety Car Heating and Lighting Co.
General Electric Co.,
Johns-Manville Corp.,
Keasbey and Mattison,
Cork Import Corp.,
United Cork Cos. of New York,
Insulite Co.,
Celotex Co.,
MacAndrews & Forbes Co.,
Wood Conversion Co.,
J. W. Mortell Co.,
Invincible House Lining Co.,
Dry Zero Corp.,
Stewart Inso Board Co.,
Ehret Magnesia Mfg. Co.

Friday afternoon there was an exhibition and inspection of dairy equipment as installed by the college.

The following members attended: O. C. Arens, R. W. Ayres, A. H. Baer, C. T. Baker, Louis Baron, J. S. Beamensderfer, C. F. Belshaw, S. J. Benn, S. Bennis, H. J. Botchford, R. W. Bowers, J. H. Bracken, G. B. Bright, Leon Buehler, Jr., R. H. Burkhart, W. H. Carrier, F. M. Cockrell, B. H. Coffey, J. Contel, A. Crawford Craig, O. E. Dunnum, H. D. Edwards, A. J. Ferretti, Crosby Field, D. L. Fiske, A. W. France, R. T. Frazier, Ezra Prick.

F. M. Fuller, J. C. Goosmann, C. P. Goree, Jr., C. H. Hall, George Hilger, E. M. Holcombe, G. E. Hulse, J. A. Kaplan, L. S. Keilholtz, D. F. Keith, W. O. Kline, George Lange, R. R. Leonard, L. L. Lewis, H. B. Lindsay, L. M. Lynn, I. E. McFarland, A. L. McMillan, J. A. Martocello, W. H. Motz, E. F. Mueller, Glenn Muffly, A. W. Oakley, Gale T. Pearce, R. J. Quinn, F. B. Riley, L. H. Roller.

R. E. Rolling, W. R. Ronemous, Harry Sloan, N. M. Small, R. L. Smith, John E. Starr, A. R. Stevenson, Jr., F. S. Strite, G. V. Thompson, W. M. Timmerman, H. G. Venemann, J. H. H. Voss, R. W. Waterfill, W. M. Weintraub, J. E. Westervelt, P. A. Willis, W. E. Zieber and F. R. Zumbro.

Wives and guests included: A. C. Allison, R. E. Backstrom, Miss Lyda Baker, Mrs. C. F. Belshaw, L. P. Bannister, Mrs. J. H. Bracken, J. H. Browne, Mrs. R. W. Bowers, Mr. and Mrs. J. Bunning, Mrs. G. B. Bright, L. V. Burton, A. N. Chandler, Mrs. J. Contel, D. H. Corlette, L. E. Cover, Mrs. A. C. Craig, C. C. Cromwell, Mrs. H. D. Edwards, H. W. Eagles, B. A. Eger, C. H. Eisenhuth, Mrs. Crosby Field, J. H. Fehr, P. J. Forsythe, D. D. Grassick, Mrs. Ezra Frick, Lester Hall, G. S. Harris.

E. S. Hartman, J. F. Hoffman, A. H. Holcombe, J. R. Hornaday, A. E. Howe, H. T. Hulett, Mrs. G. E. Hulse, Miss E. Humburch, R. S. Humburch, L. F. Johnston, Mrs. D. F. Keith, H. Kreinbaugh, D. C. Lewis, E. C. Lloyd, J. E. Linebaugh, Mrs. I. E. McFarland, Mrs. J. A. Martocello, P. D. Mallay, Mrs. Glenn Muffly, Mr. and Mrs. G. D. Ogden, Mrs. E. F. Mueller, C. P. Pel, K. A. Pritchett, Mr. and Mrs. Oscar M. Ragsdale, Mr. and Mrs. M. B. Richardson, Mr. K. M. Ritchie.

Arthur Roe, Mrs. W. R. Ronemous, C. Z. Rosecrans, A. Saunders, R. Shirey, L. K. Silicox, E. S. Smith, Jr., L. B. Spafford, G. A. Stephenson, F. H. Stiening, J. D. Stroebell, N. V. Sudduth, E. A. Sweeley, Mr. and Mrs. C. K. Swift, Mr. and Mrs. E. E. Tanguy, C. R. Texter, D. D. Wile and Mr. and Mrs. L. M. Young.

Members of the College Faculty who attended include the following: Mr. C. L. Allen, L. J. Bradford, Dr. G. C. Chandlee, J. I. Clower, Mr. and Mrs. C. C. Cochran, Mr. and Mrs. H. A. Everett, G. L. Guillet, F. G. Hechler, President and Mrs. R. D. Hetzel, Mr. and Mrs. J. J. Light, P. J. Reber, Mr. and Mrs. W. H. Reish, Dean R. L. Sackett, J. K. Shaffer, N. R. Sparks, Mr. and Mrs. W. G. C. Thompson, Mr. and Mrs. F. M. Torrence, Dean Gerald L. Wendt and O. B. Wert.

Many others besides the above 176 were in attendance but did not register.

HOUSTON G. E. DISTRIBUTOR MOVES TO LARGER QUARTERS

The Edmundson Refrigerating Corp., Houston distributors for General Electric Refrigerators, has enlarged its personnel and opened new offices. The company is now at home in its beautiful new two-story brick building on Waugh Drive at D'Amico Street. It still maintains a branch office and show rooms at the Radio Lighthouse on Main Street.

The first floor of the new building houses a large show room with plate glass windows extending on each side and displaying every model in the General Electric refrigerator line. At the rear of the show room is the shipping department with all modern conveniences for loading, assembling and testing. The second floor is occupied by the executive and business offices with a large room for organization and sales meetings.

Recently the company purchased a club house on the bay, with all conveniences and motor boats at the disposal of the employees.

Aided by the increase in the sales force, an extensive advertising campaign and the hot summer weather in Texas, the company is looking forward to one of the largest months in the history of its organization.

Interesting Installations

DRUG STORE UTILIZES ELECTRIC COOLING TO KEEP SERUMS POTENT

By Helen Lockwood Coffin

R. H. DAVISSON Co., Long Beach, Calif., distributors of General Electric refrigerators, have recently installed a model P L 95 General Electric refrigerator in the Pacific Prescription Pharmacy in Long Beach for the preservation of serums. Ira Worman, proprietor and manager of the pharmacy, noticed the service his domestic installation was giving and decided that electric refrigeration could be utilized in his drug store business.

So he went down to see the Davisson Co. and between them they evolved equipment which is proving satisfactory in the laboratory. Mr. Worman chose the regular model P L 95 and added a storage arrangement of his own devising. These serums come packed in small containers of either pasteboard or wood, of varying shapes and sizes. They look like the tiny boxes that pills and capsules come in from any drug store.

The storage arrangement within the refrigerator was adapted from those in general use in biological ice refrigerators. It is a series of drawers, of various sizes and shapes, made of galvanized zinc, and has much the appearance of the familiar office filing case. The bottom of each drawer is perforated, and in addition an inch and a half free space is left around all the drawers to provide for the circulation of cold air which is so necessary.

Refrigeration for this type of merchandise must be kept constant at from forty to fourty-four degrees. Before the unit left the Davisson custody it was most carefully tested over a period of several weeks. And now it is so accurately adjusted that, as Mr. Worman says, "it does not vary four degrees high or low from the setting. All this type of merchandise has expiration dates, stamped on each container. With such a refrigeration system as this we can carry the packages twelve months beyond the date and they will still be potent.

"We are only using now about seventy per cent of our storage capacity but that is enough to carry us through normal needs in a city of the size of Long Beach, which is about 200,000, and let us take care of an emergency epidemic if it should occur. We furnish serums to physicians outside of Long Beach, as well as caring for our local demands. It is easier for many of them to come to us than to go to Los Angeles. And we carry all the serums and antitoxins that have been made."

I asked him what was the approximate value of the serums he had then in the refrigerator, even in its uncrowded condition, and he said the value of the contents was three times that of the box. "Mr. Davisson asked me something like that and I told him, 'If you'll buy the contents of the box I'll buy another refrigerator.'"

EIGHT ROOM COOLERS IN DETROIT CAFETERIA

Eight Frigidaire room coolers have been doing duty during the month of June in the Rheaume cafeteria in the basement of the Industrial Bank building of Detroit.

"So far the experiment has proved a complete success," claims Fred P. Vance, purchasing agent for the Rheaume chain of cafeterias. "For a long time we have been attempting to combat a humid, muggy atmosphere which obtained in that particular cafeteria, and we find that these room coolers have satisfactorily solved the problem."

The eight coolers are placed so as to enclose the space for tables in this cafeteria. One is in each corner, one at the center of each of three walls, and one is against a post in front of the steam table which lines the fourth wall. A thermometer hung in the center of the room register 72 degrees Fahrenheit throughout the day.

In the basement below the cafeteria are eight condensing units for operating the coolers above. The entire outfit was installed at a cost approximately $6,500. The Rheaume organization operates 13 restaurants and cafeterias in the city of Detroit.

REFRIGERATION CUTS DOWN LABOR COSTS AT TROUT HATCHERY

By Fred E. Kunkel

THE Trexler Trout Hatchery, near Allentown, Pa., believes in using modern electric refrigeration equipment in its operation. This method not only cuts down labor costs, but also maintains a constant supply of fresh fish, in addition to manufacturing its own ice.

Before the refrigerating plant was installed at the hatchery (to save labor primarily), a man would have to go out in the pond with a net and make a catch, consuming a half hour to get a small mess of trout to sell when people called at the hatchery. Now they can get them out in the morning and make an entire catch at one time, thus saving a lot of extra labor. At other times when the water was muddy, it was difficult to catch trout in a hand net and sales could not be made. With electrical refrigeration they can now store trout and have them ready for sale at all times, and also keep them in good saleable condition.

Another convenience is the manufacturing of their own ice for packing and shipping. They always have ice handy in which to pack their trout. Another saving is in the storing of feed. They can buy ten barrels of fresh trout feed and store it by putting it in the cooler and keeping it near the freezing point.

The trout hatchery is used to develop fingerlings with which to stock private or state streams and lakes and a lot are also bought by private clubs for stocking purposes. In addition, full-sized trout are sold to hotels and restaurants and even shipped to New York. Trout spawn is sold to the government, two million eggs having been sold recently to the Canadian government, and a carload was shipped to New York state.

The hatchery is operated on a commercial basis and has a capacity of fifteen tons. A lot of trout is sold for table food to New York hotels, and to steamship lines operating out of New York harbor.

The installation is a one ton Frick combined refrigerating machine which is designed to cool a fish storage refrigerator 10 ft. long, 6 ft. wide and 7 ft. 6 in. high. Also to make about 500 lbs. of ice daily in 50-gallon cans. The installation is of the ammonia compression type, together with galvanized cooling coils in the refrigerator and black cooling coils in the ice making tank. There is also installed a small, centrifugal, bronze water pump to circulate cooling water from their well which is used for condensing purposes as well as for washing up around the hatchery. The installation is entirely automatic in operation.

KELVINATOR WATER COOLING EQUIPMENT INSTALLED IN SAN JOSE, CALIF., LAUNDRY

The Hot'n Kold Shop, San Jose, Calif., has installed a Kelvinator drinking fountain system in the Temple Laundry, in that city.

Six water coolers were installed at convenient locations throughout the plant, which covers some 35,000 sq. ft. The copper tubing was run in conduit under the concrete floor, some lengths running as long as 200 feet.

When connections were made with a tubing for service to a far removed fountain, a metal box was placed in the concrete over the connection so it would be accessible at all times.

The cabinets are all porcelain, in keeping with the fixtures in the laundry. The flood system is used with automatic control, keeping water at the same temperature at all times. A three-quarter hp. air-cooled compressor is used. It is installed in a four-foot concrete-lined pit in order to afford necessary drainage.

Monroe, La., Dealer Places 9 G. E. Water Coolers In Paper Mill

The Brown Paper Mill, Monroe, La., has been equipped with General Electric water coolers. There are nine water coolers in this mill, of which five are of the double bubbler type. The Electric Refrigerator Co., Monroe, closed this order.

If misery loves company, the hairpin, petticoat and corkscrew manufacturers must be fond of the ice man.

—Detroit Free Press.

DETROIT LAWMAKERS ADD NEW MULTIPLE CODE TO ORDINANCE

(Concluded from page 1, column 4)

in operation until the complete installation has been tested by the installer in the presence of the authority enforcing this code. A certificate of approval shall be posted on the premises where the system is installed. Tests shall include a vacuum test of the complete piping system, preferably with the evaporators installed, but valves thereon may be closed to prevent withdrawal of the refrigerant; under this test a vacuum of 20 inches of mercury shall be placed upon the system and shall be held for a period of 20 minutes with no detachable drop, after the pump has been stopped.

(c) After the vacuum test, the system of piping shall be tested by application of pressure as indicated in the table below:

TEST PRESSURES

Refrigerant Used	High Side Part Lbs. per sq. in.
Carbon dioxide	1,500
Ammonia	300
Methyl chloride	180
Sulphur dioxide	135
Iso-butane	130
Butane	75
Ethyl chloride	50
Methylene chloride	15
Refrigerant Used	**Low Side Part Lbs. per sq. in.**
Carbon dioxide	750
Ammonia	150
Methyl chloride	80
Sulphur dioxide	50
Iso-butane	50
Butane	35
Ethyl chloride	25
Methylene chloride	15

Note.—It is suggested that test pressures be imposed by the use of carbon dioxide or nitrogen.

Section 21. Capacity Limitation.

(a) No multiple system shall contain more than 100 pounds of refrigerant.

(b) Compressors shall not be located under stairways or near dumb waiter or elevator shafts; shall be located as nearly beneath the riser as practicable; shall preferably not be in a room containing storage of combustible material; shall in any case be located at least 10 feet from such storage; shall be located in an accessible part of the building with adequate lighting facility provided; and shall be protected against mechanical injury by a non-combustible partition, or by heavy metal netting secured by two by four-inch wooden studding or to metal posts.

Section 22. Refrigerant Lines. Refrigerant lines shall be installed in accordance with either of the following methods:

(a) Standard pipe for refrigerants requiring test pressures of 300 pounds or less, and extra heavy pipe for test pressures in excess of this figure.

(b) Approved annealed seamless copper tubing of not less than .034 inch wall thickness for diameters not exceeding five-eighths inch, and of corresponding greater wall thickness for larger diameters. Where this method is employed tubing shall be protected from mechanical injury as follows:

From the manifolds at the compressor tubing shall be installed in iron or steel pipe or other metal enclosures as specified below, with suitable metal boxes for the manifold and for all other valves except those at the evaporator. Flexible metal enclosures may be used at bends or at terminals if not exceeding 6 feet in length and rigidly fastened to connecting pipe and/or valve boxes. Each run of pipe shall be sealed or plugged at each junction box inlet with a material not affected by moisture or the temperature of the line. Enclosures shall be rigidly secured to the walls or other support. Tubing shall be independently supported in such a manner as to prevent excessive vibration and strains at joints and connections. Valves, service connections and joints in tubing shall be rigidly secured in suitable metal boxes at accessible points.

Section 23. Joints.

(a) Pipe joints shall have standard pipe threads and shall be made up with materials suitable to the refrigerant employed.

(b) If flanged fittings are used for pipe connections they shall be of recessed gasket type.

(c) All joints in copper tubing shall be of sweated types, except that flared joints may be used for tubing not more than 5-8 inch in diameter and where the required test pressure does not exceed 180 pounds.

(d) All joints in tubing shall be accessible.

Section 24. Valves and Fittings.

(a) All valves and fittings on the high pressure side of the system shall be of the forged type; or castings of semi-steel may be used.

(b) Shut-off valves shall be installed at the following locations: At each service outlet in pressure and return lines, and in each riser or manifold connection at or near the compressor. These valves shall be fitted with a hand wheel or other means of ready operation as an integral part thereof.

(c) Valves in service connections shall be located outside of refrigerating unit and at such distance above the floor as will provide ready accessibility.

(d) Shut-off valves shall be installed in both connections to every evaporator in such a manner as to permit the removal of the evaporator with valves attached.

Section 25. Service Connections.

(a) Not more than a single tenant shall be supplied from an outlet box on a main riser. Such outlet box shall be located within the premises of the tenant served and so arranged as to be accessible at all times.

(b) No outlet or junction box shall be permitted in any hallway, stairway or vertical shaft not cut off at each story. Elevator, dumbwaiter or other shafts containing moving objects shall not be used for outlet or junction boxes, nor for tubing or piping carrying refrigerant.

(c) Every refrigerant line shall be rigidly secured in place.

Section 26. Safety Features.

(a) Each compressor drive shall be provided with a device which will automatically stop the compressor at a pressure not in excess of the test pressure as specified in Section 3. This shall not apply to air-cooled machines, nor to water-cooled machines having a liquid receiver capacity of less than 12 pounds of refrigerant and which are so designed as not to permit a pressure in excess of the test pressure.

(b) Where ammonia or carbon dioxide are used every high pressure side or liquid receiver which can be shut off shall be equipped with a pressure relief device discharging into the low pressure side of the system or to the outside of the building. Where the relief from the high pressure side is into the low pressure side the latter shall be protected by a relief device discharging to the outside of the building or to a suitable absorber.

(c) Refrigerant piping or enclosure carrying refrigerant lines shall be conspicuously marked or labelled so as to plainly indicate its contents.

Section 27. Instructions.

(a) Printed instructions covering the operation and maintenance of the system and what to do in emergencies shall be permanently posted at riser control valves.

(b) It is recommended that such instructions include a diagrammatic sketch of the system with the parts labelled for reference.

BUTTER SCOTCH CREAM

½ cup brown sugar.
2 tablespoons butter.
¼ cup water.
2 egg yolks.
⅛ teaspoon salt.
1 teaspoon vanilla.
1 cup whipping cream.

Place the sugar and butter in a saucepan and stir until melted. Add the ¼ cup of water and cook slowly, until well blended. Then pour into the well-beaten egg yolks. Cook over hot water until very light and fluffy. Chill, add the salt and vanilla and fold into the stiffy whipped cream. Pour into a electric refrigerator tray and freeze 4 to 5 hours.

MUFFLY'S COMMITTEE WORKS OUT SAFETY PLAN FOR MULTIPLES

(Concluded from page 1, column 5)

writers, New York; L. P. Bannister, National Electrical Manufacturers' Association, New York; F. M. Cockrell, ELECTRIC REFRIGERATION NEWS, Detroit; and members of the Technical Committee listed above.

Changes in the national safety code, which will be required in order to incorporate the compromised viewpoint, will not be available until the plan has been formally presented to the committee of the American Standards Association officially in charge of this activity, but it is believed that no serious objection will be made now that the principal factors in the dispute have been brought together.

Among other matters taken up by the Technical Committee of the Refrigeration Division, National Electrical Manufacturers' Association, at the meeting held Monday was the drafting of recommendations for a standard method of specifying the gross cubic content, net cubic content and shelf area of refrigerator cabinets. The following recommendations were made:

Definitions

Gross cubic content is defined as the total inside volume of a refrigerator cabinet.

Net cubic content is defined as the total space available for food storage and/or ice-making.

The evaporating unit is defined as the entire cooling structure and is to be measured on its extreme outside dimensions.

The following methods of measuring give the gross and net content:

Outside Width—Use depth of lining except in cases where refrigerator door extends in width beyond the front of the lining, in which case the distance from the inside of the door to the inside of the back lining shall be used.

Inside Width—Use width between the side walls of the lining for calculation of gross content as well as of net content *below the evaporating unit.*

Inside Height—Use height from floor to ceiling.

Gross Cubic Content—The gross cubic content is a product of the above dimension.

Net Width—The net width of food space beside the evaporating unit is to be measured from the inside of the lining on one side to the evaporating unit or to the side baffle where used. Where such dimension is less than four inches the space shall not be included in net content.

Net Depth—The net depth of food space in front of evaporating unit shall be included only in case this dimension is greater than four inches measured from the extreme front of evaporating unit, baffle or ice tray pulls to the inside front of refrigerator cabinet as measured for depth.

(See heading "inside depth"). Space back of the evaporator shall not be included in net cubic content.

Net Height—The net height of food space below the evaporating unit shall be measured from the floor of the lining up to the bottom of the drip pan or shelf supporting same except when defrosting is nonautomatic and the drip pan space is useable for food storage. It is permissible to include the space used by the drip pan in the net cubic content. Where the drip pan space is not used in net food space *it shall be so stated.*

Space directly above the evaporating unit shall not be included in net cubic content except in cases where the unobstructed storage space is greater than four inches in height and specifically arranged for food storage.

Shelf area shall include the floor of the lining of the refrigerator cabinet.

Dimensions employed in carrying shelf area shall be the same as the horizontal dimensions used in calculating net cubic contents. Where shelves lack more than two inches of these dimensions the actual linear dimensions of the shelf shall be counted.

Drip Pan—Where cubic content includes the space occupied by the drip pan shelf area occupied by the drip pan shall be included as part of the total shelf area.

Shelf Spacing—Recognizing the importance of shelf spacing we recommend the use of the following constant which is to be called "Average Shelf Spacing." It is determined in inches by dividing the net cubic foot content of the refrigerator cabinet by the square foot of shelf area and multiplying this quotient by twelve.

Correction

In a story appearing on page one of the May 22 issue of the NEWS concerning production of refrigerating units by the Liberty Tool & Gage Co., Providence, R. I., Stanley and Patterson, New York, N. Y., were erroneously included as distributors for the Liberty machine in New York territory.

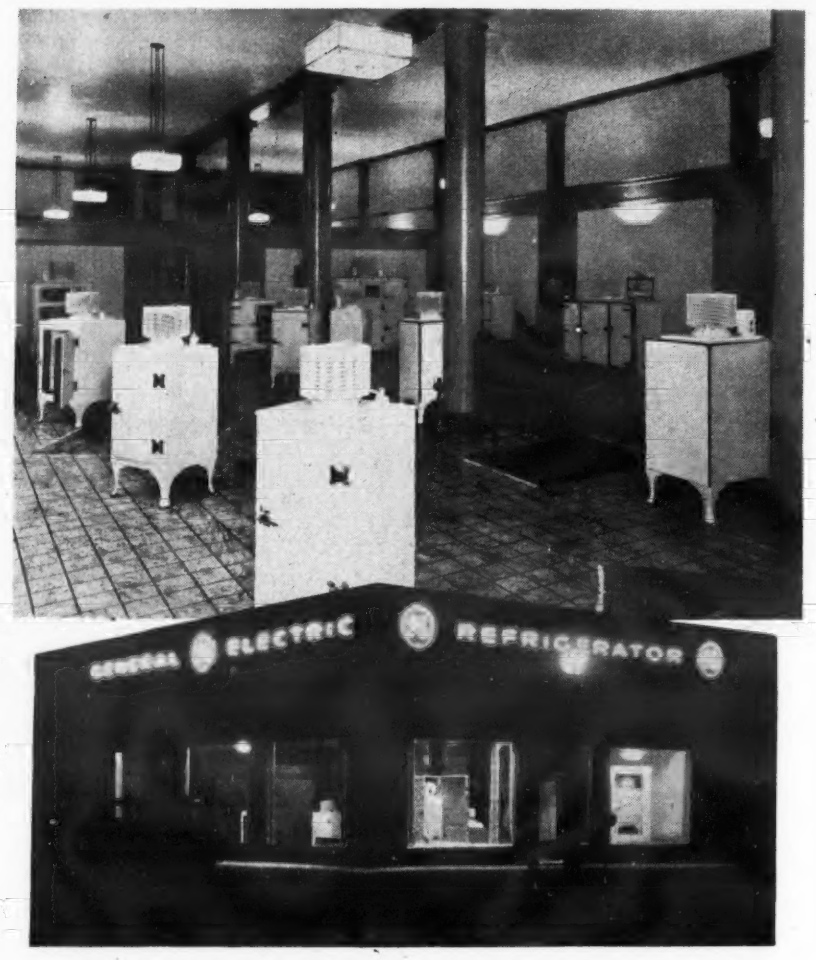
Effective Lighting of Display Quarters Is Vital Element In Electric Refrigeration Sales

Buffalo G. E. Distributor Provides Ample Lighting Facilities In New Sales Room

By John Winters Fleming

THE most modern of lighting requirements have been met in the new luxurious home of Erco, Inc., Buffalo, N. Y., General Electric refrigerator distributors throughout western New York state.

When this concern moved into its new quarters at the corners of Main, Goodell and Washington Streets, in March, 1929, the problem was how to light 16,000 square feet of floor space devoted to display



Interior and Exterior Views of the Erco, Inc., Store

rooms, offices, and warehouses, and how to light seven large display windows with more than 1,000 square feet of glass.

Erco's present home comprises two floors, the street-level floor where the display rooms and offices are located, and the basement where the warehouse is situated. Each floor measures forty feet wide by two hundred feet deep, or 8,000 square feet of floor space apiece. To light these two levels this company expends 29.85 kilowatts of electric lighting power, or 29,850 watts for illuminating its display rooms, offices, warehouse, and show windows.

The sales room is lighted in two manners: by wall urns with totally indirect illumination and by ceiling fixtures with semi-indirect lighting. The nine wall urns are built right into the walls. They are spaced on fifteen-foot centers with the top of the urn standing nine feet from the floor. Each urn is fitted with a 250-watt reflector of the type that can utilize color screens when colored lighting effects are desired.

The ceiling fixtures are exactly 26 inches square in shape and size and are each suspended from the ceiling by four bronze rods. Each of these ceiling fixtures is ten inches high and each takes six 100-watt inside frosted lamps. There are eight of these unusual square fixtures spaced on fifteen-foot centers.

Back of the sales room are the offices occupying the rear portion of the street-level floor. There are ten offices for the officials and salesmen of the company. The main office is lighted with two chain-suspended, semi-indirect fixtures, each with a 300-watt clear lamp in them. The remaining nine sanctums are lighted with one chain-suspended, semi-indirect luminaire, also with a 300-watt clear lamp. The basement warehouse lighting comprises twelve 150-watt reflectors on 15-foot centers and using clear lamps.

In the two front windows across the Main Street, sales room front of the shop, each window measuring eight feet deep by fourteen feet across and ten feet high, there are twenty 300-watt reflectors, ten to each window, spaced on fifteen-inch centers. Three more windows which extend for half a city block down Goodell Street from Main are lighted by 30 reflectors, again ten to a window and also spaced fifteen feet apart, but using 150-watt lamps instead of the 300-watt ones.

The remaining two windows, at the rear of the store, facing out onto Washington Street, are the largest. They each measure 17 feet across by ten feet high and extend the whole width of the rear of the shop. Here there are twenty-four 300-watt reflectors, 12 to each window and each using a 300-watt lamp.

The front and side windows are used to display domestic electric refrigerators while the two rear windows show the larger units for hotels, clubs, schools, hospitals. Two huge neon signs extend across the front and down the side of the store.

The result of this lighting was apparent days before this distributor moved into its new home. Crowds gathered on the sidewalk for days before the opening just to watch the electricians install the novel-looking fixtures. The night of the first official public lighting of the store a vast throng jammed the sidewalk and out into the street to gaze enraptured at the startlingly pleasing effect.

MASSACHUSETTS KELVINATOR DISTRIBUTOR ENLARGES STORE

Springfield Kelvinator Sales, Inc., having the distribution of Kelvinator refrigerators in Hampden, Hampshire, Franklin and Worcester counties, in Massachusetts, has enlarged its quarters at 68 Vernon St., Springfield, by annexing another store to give a more comprehensive display of commercial and domestic lines. It also has opened a storehouse in Birnie Ave., with railroad frontage. This agency was opened April 15 by Milton C. Knight and Howard S. Neff.

Alfred E. Ravenning, formerly representing the Hussmann Refrigerator Co. of St. Louis, has been made commercial supervisor for Springfield Kelvinator Sales, Inc.; George Fisher, formerly with Charles Rice, Inc., Copeland distributor in Springfield, has been put in charge of rural business for Kelvinator in the district; and Elon G. Clarke, formerly New England manager for the Esco Milk Cooling Cabinets Co., has taken charge of sales in the Worcester territory. The company also acts as Esco representative.

Methods of utilizing fuel by public electric utilities in 1928 as compared to 1927 represented economies which are expressed in terms of 38,000,000 tons of coal.—*Dallas Power & Light News.*

Exports of Electric Refrigerators

The tabulation in columns one and two, prepared by the News from figures reported by the Bureau of Foreign and Domestic Commerce, Washington, D. C., includes exports of electric refrigerators from January, 1927, to April, 1929, inclusive.

	1927 Sets up to 1 ton capacity		1928 Sets up to 1 ton capacity		1929 Jan.-April inclusive Sets up to ¼ ton capacity		Sets over ¼ ton up to 1 ton capacity	
	Number	Value	Number	Value	Number	Value	Number	Value
Austria	454	$ 43,787	633	$ 127,178	44	$ 7,434	21	$ 4,961
Azores & Madeira Islands	5	1,115	10	2,465	1	214		
Belgium	795	95,542	527	101,978	280	41,443	152	35,726
(Bulgaria)								
Czechoslovakia	6	1,272	37	7,840			221	67,074
Denmark	559	91,242	298	58,045	67	15,031	60	15,471
(Estonia)								
Finland			107	18,477			101	21,121
France	454	69,112	298	56,933	950	187,288	218	44,669
Germany	1,224	178,761	615	117,857	1,879	284,044	12	2,211
Gibraltar			2	587				
Greece	68	7,370	13	2,081	12	2,889		
Hungary	83	10,438	103	21,117	4	890	80	15,060
Iceland			6	1,230	1	136		
Italy	940	135,285	370	82,519	451	74,376	37	4,525
Irish Free State								
Latvia								
Lithuania	61	5,242						
Malta, Gozo, and Cyprus								
Netherlands	243	35,986	463	76,164	102	12,615	146	30,374
Norway	136	19,102	126	25,964	67	11,378	100	22,830
Poland and Danzig			2	930	90	15,751		
Portugal	40	9,161	57	12,762	14	3,266		
Rumania	1	474	13	2,532	130	30,733		
Soviet Russia in Europe								
Spain	346	82,774	814	211,459	555	107,869	11	5,250
Sweden	226	31,265	248	52,276	50	10,497	166	33,980
Switzerland	336	53,992	302	50,070	427	74,148	5	1,034
United Kingdom	2,492	419,368	1,580	214,297	3,137	478,179	4	902
Jugoslavia and Albania								
Canada	2,368	334,986	13,595	2,157,315	5,001	712,884	1,323	269,249
British Honduras	1	110			3	605		
Costa Rica	22	7,092	40	10,851	11	2,345	6	1,720
Guatemala	60	13,560	22	7,079	27	6,235	4	2,692
Honduras	3	969	21	4,054	7	2,317	2	833
Nicaragua	3	5,704	13	2,442	15	3,255		
Panama	261	58,700	182	50,340	85	26,117	31	5,786
Salvador	74	22,789	73	20,094	40	9,773	3	1,128
Mexico	393	80,090	549	128,828	242	43,004	13	4,627
Miquelon and St. Pierre Island								
Newfoundl'd & Labrador			8	1,279	4	528		
Bermudas	139	24,279	160	35,258	13	2,452	15	2,790
Barbados	18	7,989	19	4,604	9	2,756		
Jamaica	20	4,098	21	3,702	4	1,165	2	721
Trinidad and Tobago	8	2,050	4	1,715				
Other British W. Indies	15	4,048	43	9,726	20	3,769		
Cuba	143	34,067	373	185,052	424	86,710	33	14,194
Dominican Republic	86	25,884	196	46,895	33	9,658	3	1,906
Netherland W. Indies	13	5,351	13	9,469	2	1,118	2	946
French West Indies	2	406	4	1,077				
Haiti, Republic of	53	11,543	31	6,668	7	1,418		
Virgin Islands of U. S.	4	720	7	1,752	6	1,024		
Argentina	1,569	186,479	1,633	258,584	475	74,399	40	10,847
Bolivia			9	2,130			1	369
Brazil	1,654	236,733	1,727	331,123	814	151,800	232	43,704
Chile	159	21,620	126	22,128	72	11,228	57	10,256
Colombia	134	20,249	673	151,025	262	57,194	63	12,730
Ecuador	9	1,604	33	6,086	36	3,673		
Falkland Islands								
British Guiana	1	142						
Surinam								
French Guiana								
Paraguay								
Peru	67	9,490	130	28,942	60	16,174	5	1,144
Uruguay	348	67,346	391	77,338	14	2,415	36	5,446
Venezuela	233	41,384	322	67,432	62	10,243	37	15,145
Aden	10	1,688	18	3,695	12	2,155	2	698
Arabia			6	939				
British India	942	125,845	1,752	280,986	705	124,063	49	11,734
British Malaya	116	19,490	83	16,625	47	9,612	1	252
Ceylon	26	3,573	54	8,940	18	2,673	7	1,808
China	97	12,644	481	84,194	263	40,715	2	384
Java and Madura	33	6,542	111	23,636	129	26,793	11	2,206
Other Netherland East Indies	4	1,245	5	848	15	3,858		
French Indo-China	24	4,899					2	485
Hong Kong	48	6,105	106	22,595	54	11,479	33	5,934
Iraq								
Japan	63	12,018	163	38,902	56	8,995	373	75,534
Kwantung			16	4,648				
Palestine			2	500				
Persia								
Philippine Islands	690	115,260	459	92,039	536	91,662	18	2,418
Siam	8	1,192	36	7,959	12	1,790	1	261
Soviet Russia in Asia								
Syria	8	1,437	11	2,292			7	1,126
Turkey	1	218	12	1,748	38	7,184	13	3,255
Other Asia								
Australia	2,954	587,437	3,400	692,997	425	82,156	275	41,114
British Oceania	2	284	3	997				
French Oceania			4	520				
New Zealand	195	48,043	219	43,466	104	20,160	8	1,665
Ethiopia								
Belgian Congo			1	47	1	77		
British East Africa	29	5,968	60	10,838	30	4,687	1	800
Union of South Africa			861	196,250	321	59,788	49	7,776
British South Africa	836	184,927	27	4,830				
British West Africa	3	421	71	10,299				
Egypt	133	19,857	170	33,205	32	7,155	18	3,758
Algeria and Tunisia	15	1,284	14	1,825	68	9,582		
Madagascar								
Other French Africa								
Italian Africa								
Liberia	2	362	3	641				
Morocco			8	2,122	69	10,561		
Mozambique	11	1,960	6	934				
Other Portuguese Africa			2	482	2	955		
Canary Islands	3	870	5	1,198				
Other Spanish Africa	6	642	1	233	1	125		
Gold Coast					47	6,310		
Nigeria					20	2,854		
TOTALS	22,588	$3,684,981	35,712	$6,469,179	19,014	$3,137,829	4,112	$872,629

APRIL EXPORTS

Country of Destination	Units Up To ¼ Ton Capacity No.	Value	Units Over ¼ To 1 Ton Capacity No.	Value
Austria	32	5,128	—	—
Azores and Madeira Islands	1	214		
Belgium	116	15,435	81	17,890
Czechoslovakia			53	10,975
Denmark	56	11,917	1	263
Finland			34	5,990
France	352	69,603	8	3,682
Germany	368	70.519	9	1,771
Greece	10	2,680		
Hungary	1	216	38	6,865
Italy	221	34,894	37	4,525
Netherlands	24	3,689	52	11,286
Norway	14	2,500	50	11,050
Poland and Danzig	60	10,898		
Portugal	11	2,344		
Rumania	30	5,328		
Spain	244	42,172	8	2,700
Sweden	1	565	55	11,558
Switzerland	204	37,719		
United Kingdom	1,377	212,358		
Canada	2,571	371,714	162	39,943
British Honduras	2	348		
Costa Rica	3	177		
Guatemala	10	2,272		
Nicaragua	3	879		
Panama	1	468		
Salvador	7	2,280		
Mexico	127	20,162	2	753
Newfoundland and Labrador	2	235		
Bermudas	3	415		
Barbados	1	202		
Other British West Indies	3	587		
Cuba	174	35,540	1	658
Dominican Republic	19	5,963		
Haiti, Republic of	1	153		
Argentina	7	1,294	2	876
Brazil	334	53,873	69	12,758
Chili	2	277	43	7,807
Colombia	13	3,094	33	7,630
Peru	1	165		
Uruguay	4	775	14	2,867
Venezuela	18	3,028	3	8,980
Aden	3	377	1	339
British India	157	26,027	35	8,084
British Malaya	22	4,715		
Ceylon	4	239	5	1,317
China	177	21,015		
Java and Madura	26	7,015		
Other Netherland East Indies	11	3,371		
Hong Kong	6	918		
Japan	17	2,835	1	479
Philippine Islands	283	51,974		
Siam	6	1,008		
Turkey	25	3,929		
Australia	13	3,287		
New Zealand	4	513		
Belgian Congo	1	77		
British East Africa	1	279		
Union of South Africa	92	15,256		
Egypt	2	446		
Algeria and Tunisia	36	4,243		
Morocco	5	1,169		
Gold Coast	25	3,416		
Nigeria	1	267		
Total	7,345	$1,184,456	797	$181,036

Carload of Norge Refrigerators En Route to France

A carload of Norge Refrigerators left Detroit recently, bound for Paris, France. This shipment was sent in response to the initial order from the French distributor for the Norge Corp., the Societe Generale de Material Frigorifique of Paris.